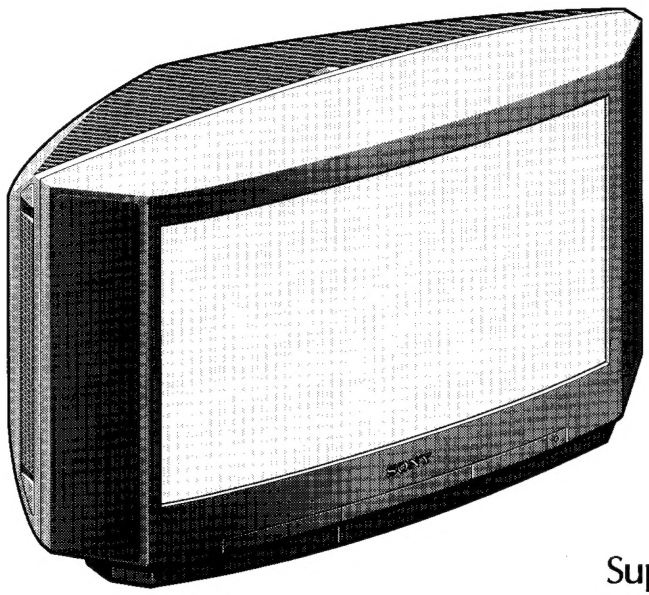
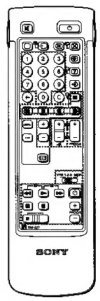
SERVICE MANUAL

BE-3B CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-24WS1A	RM-837	Italian	SCC-G81S-A
KV-24WS1B	RM-837	French	SCC-G85Q-A
KV-24WS1D	RM-837	AEP	SCC-G77S-A
KV-24WS1E	RM-837	Spanish	SCC-G82S-A
KV-24WS1K	RM-837	OIRT	SCC-G86K-A
KV-24WS1R	RM-837	OIRT	SCC-G86R-A
KV-24WS1U	RM-837	UK	SCC-G87L-A





Super**Trinitron**

WIDE

MICROFILM

TRINITRON® COLOR TV

SONY®

ITEM MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2	PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
French	L, B/G/H, I	L VHF: F2-F10 UHF: F21-F69 Cable TV: B-Q, S21-S44 B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05 ITALY VHF: A-H UHF: H1, H2 I B21-B69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
AEP	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R1-R12 UHF: R21-R69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
Spanish	B/G/H	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
OIRT	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R1-R12 UHF: R21-R69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
UK	I	UHF: B21-B69	PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)

MODEL	Italian	French	AEP	Spanish	OIRT	UK
Power Consumption	93W	93W	93W	93W	93W	157.5W

SPECIFICATIONS

Picture Tube — Super Trinitron Wide
Approx. 61 cm (24 inches)
(Approx. 56 cm picture measured diagonally)
100° -deflection

Input/Output Terminals

[REAR]

21-pin Euro connector (CENELEC standard)
- Inputs for audio and video
- Inputs for RGB
- Outputs of TV video and audio

S→2/←S2 21-pin Euro connector
- Inputs for audio and video
- Inputs for S video
- Outputs of TV video and audio (selectable)

Audio outputs (variable) - phono jacks

[FRONT]

→S3 Video input-phono jack
→3 Audio input-phono jacks
→S3 S video input-4-in DIN
Ω Headphone jack : stereo mini jack

Sound output	2x15W (RMS) 2x30W (music power)
Dimensions	Approx. 696x426x479 mm
Weight	Approx. 35 kg
Supplied accessories	RM-837 Remote Commander (1) battery R6 (1)

Other features
- Fastext
- Toptext (KV-24WS1A/24WS1B/24WS1D/24WS1E/24WS1K/24WS1R only)
- Nicam (KV-24WS1B/24WS1E/24WS1U only)

[RM-837]

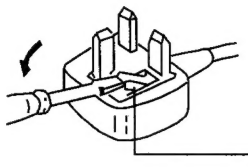
Remote control system	infrared control
Power requirements	1.5V dc 1 battery IEC designation R6 (size AA)
Dimensions	Approx. 65x225x21 mm (w/h/d)
Weight	Approx. 157g (Not including battery)

Design and specifications are subject to change without notice.

Model name / Item	KV-24WS1A	KV24WS1B	KV-24WS1D	KV-24WS1E	KV-24WS1K KV-24WS1R	KV-24WS1U
Pal Comb	OFF	OFF	OFF	OFF	OFF	OFF
PIP	OFF	OFF	OFF	OFF	OFF	OFF
RGB Priority	ON	ON	ON	ON	ON	ON
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	ON	ON	ON	ON	ON	ON
Norm B/G/H	ON	ON	ON	ON	ON	OFF
Norm I	OFF	ON	OFF	OFF	OFF	ON
Norm D/K	ON	OFF	ON	OFF	ON	OFF
Norm AUS	OFF	OFF	OFF	OFF	OFF	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF	OFF	OFF
Language Preset	Italian	French	German	Spanish	OIRT	English

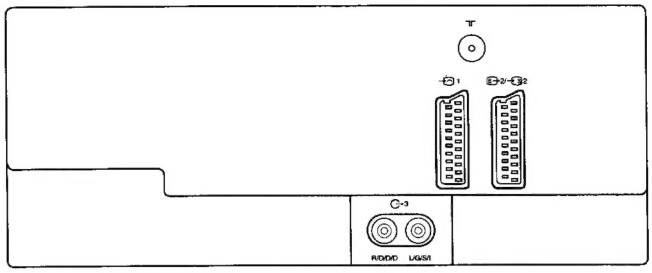
WARNING (KV-24WS1U only)

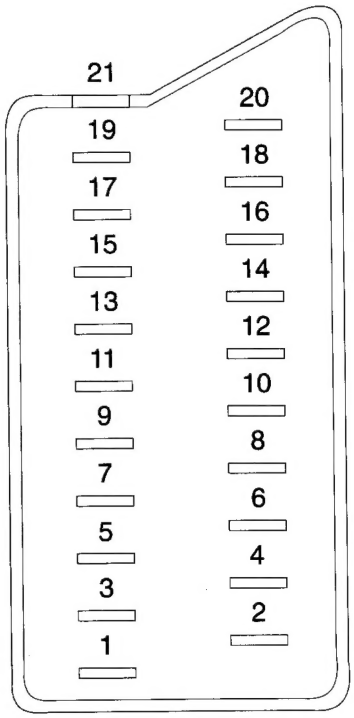
The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by **ASTA** to **BS 1362**, ie one that carries the ASTA mark.
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME.
IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED.
THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.
When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.
Open the fuse compartment with the screwdriver blade
and replace the fuse.

21 pin connector (1, 2/2)





Pin No		Signal	Signal level
1	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance:less than 1kohm*
2	○	Audio input B (right)	Standard level:0.5Vrms Input impedance:More than 10kohms*
3	○	Audio output A (left)	Standard level:0.5Vrms Output impedance:less than 1kohm*
4	○	Ground (audio)	
5	○	Ground (blue)	
6	○	Audio input A (left)	Standard level:0.5Vrms Input impedance:More than 10kohms*
7	○	Blue input	0.7V±3dB, 75ohms, positive
8	○	Function select (AV control)	High state (9.5—12V):Part mode Low state (0—2V):TV mode Input impedance:More than 10kohms Input capacitance:Less than 2nF
9	○	Ground (green)	
10	○	Open	
11	○	Green	Green signal:0.7V±3dB. 75ohms, positive
12	○	Open	
13	○	Ground(red)	
14	●	Ground (blanking)	
15	○	Red input	0.7V±3dB, 75ohms, positive
	—	(S signal) croma input	0.3V±3dB, 75ohms, positive
16	○	Blanking input (Ys signal)	High state (1—3V) Low state (0—0.4V) Input impedance:75ohms
17	○	Ground (video output)	
18	○	Ground (video input)	
19	○	Video output	1V±3dB, 75ohms, positive Sync:0.3V(–3, +10dB)
20	○	Video input	1V±3dB, 75ohms, positive Sync:0.3V(–3, +10dB)
	—	Video Input/Y (S signal)	1V±3dB, 75ohms, positive Sync:0.3V(–3, +10dB)
21	○	Common ground (plug, shield)	

○ Connected ● Not Connected (open) * at 20Hz - 20kHz

Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75 ohm , positive Sync. 0.3V -3/+10 dB
4	C (S signal) input	0.3V ± 3dB 75 ohm , positive Sync.

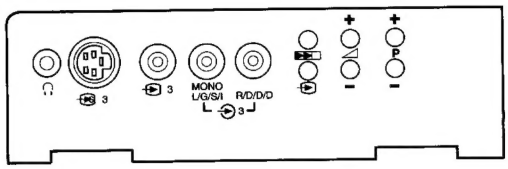


TABLE OF CONTENTS

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.
LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

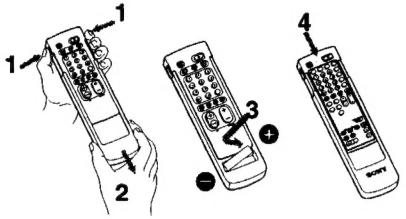
LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE PUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

Getting Started

Inserting the Battery Into the Remote Commander



Remove the cover.

Check the correct polarity.

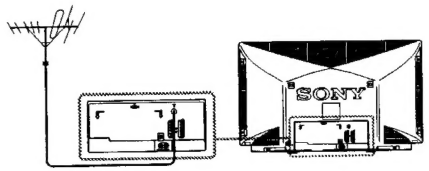
Refit the outside cover making sure that the Full Function side is visible.

About Battery Life

Under normal operation, a battery will last up to half a year. Always remember to dispose of used battery in an environmental friendly way.

Connecting the Aerial

Connect aerial to the ⊤ socket at the rear of the TV. (cable not supplied)



Choosing a Language

(See inside of front cover and back cover)

1 Press ⏻ A on the TV.
The TV turns on. If the standby indicator B on the TV is lit, press ▭ 3 or any number button 4 on the Remote Commander.

2 Press MENU 7 on the Remote Commander.
The SELECT LANGUAGE screen appears. MENU

3 Press one of the colour buttons 17 on the Remote Commander to select a language (Press the white button 17 to display other language alternatives).
The SELECT LANGUAGE screen clears and all subsequent menus appear in the chosen language.

SELECT LANGUAGE
- ENGLISH
- DEUTSCH
- FRANÇAIS
- ESPAÑOL
- MORE

SELECT COL. BUTTON

Note: From the second time you turn on the TV, the MENU screen appears instead of the SELECT LANGUAGE screen. Press the yellow button 17 then press the white button 17 to redisplay the SELECT LANGUAGE screen.

Tuning in to Channels

You can tune in up to 100 channels to programme positions either automatically or manually.

auto tuning: A single button press allows all receivable channels to be tuned. Use if you are unfamiliar with the channel numbers of stations.

manual tuning: Use if you are familiar with the channel numbers of stations.

Choose the more appropriate way for you.

Tuning in to Channels Automatically

There are two possibilities for auto tuning;

A. On the TV: hold down ▶▶| E on the front of the TV for 2 seconds
Note: The button ▶▶| E for Automatic Presetting of channels is protected to prevent accidental usage. Use the tip of a pencil to press it.

or

B. On the Remote Commander: as follows

1 Press MENU 7.

2 Press the white button 17.

3 Hold down the red button 17 for 2 seconds.

Note: Press the green button 17 to cancel.

Tuning in to Channels Manually

1 Press MENU 7.
The MENU screen appears. MENU

2 Press the white button 17 to select PRESET.
The PRESET screen appears.

PRESET
- AUTO TUNING
- MANUAL TUNING
- PROGR EXCHANGE
- EDIT PROGR NAME
- FINE TUNE

SELECT COL. BUTTON

3 Press the green button 17 to select MANUAL TUNING.
The MANUAL TUNING screen appears.

MANUAL TUNING

01 B/G C21 -----
- SKIP OFF
- OK

ENTER PROGR. NO.
USE NO. BUTTONS OR
CHANGE BY MENU +/-

4 Press the number buttons 4 or MENU+/– 9 to select a programme position.
If you use the number buttons 4, enter a double-digit number. (e.g. for programme number 4, first press 0, then 4)

5 Press the green button 17.

Note: Use MENU +/– 9 to select TV system. You can alternatively select input sources which may be assigned to programme positions. The display changes as follows:

MANUAL TUNING

01 B/G C21 -----
- OK

SELECT SYSTEM/INPUT
CHANGE BY MENU +/-

B/G ⟷ D/K ⟷ AV1 ⟷ RGB ⟷ AV2 ⟷ YC2 ⟷ AV3 ⟷ YC3

6 Press the green button 17.

Note: If a video input source is selected in step 5, this is now stored. Refer to step 4 to tune other programme positions.

MANUAL TUNING

01 B/G C21 -----
- C/S
- OK

ENTER CHANNEL NO.
USE NO. BUTTONS OR
SEARCH BY MENU +/-

7 Press the red button 17 to select C (regular channel) or S (cable channel).

8 Press the number buttons 4 or MENU+/– 9 to select the channel number.
If you use the number buttons 4, enter a double-digit number. (e.g. for channel 23, first press 2, then 3)

9 Press the green button 17 to store.

Note: If you want to preset other channels, repeat steps 4 to 9.

10 Press MENU 7 twice to return to the normal screen.

Note: You can skip unused programme positions when selecting programmes with the PROGR +/– buttons 18. Press the red button 17 to skip in step 4. However, the skipped programmes may still be called up when you use the number buttons.

Basic TV Operations

Turning the TV on and off

Turning on
Depress ⏻ A on the TV.

Turning off temporarily
Press ⏻ 10 on the Remote Commander.
The TV enters standby mode and the standby indicator B on the front of the TV lights up.

Turning on again
Press ▭ 3, PROGR+/– 18, or one of the number buttons 4 on the Remote Commander.

Turning off completely
Depress ⏻ A on the TV.
Note: It is recommended to use ⏻ A to turn off the TV. This could help you save energy.

Selecting TV Programmes

Press PROGR+/– 18 or press number buttons 4.

To select a double-digit number
Press -/-- 5, then the number buttons 4.

Adjusting the Volume

Press ◢+/– 19.

Muting the Sound

Press 🔇 1.
To resume normal sound, press 🔇 1 again.

Displaying the On-screen Indications

Press ⓘ 14 once to display the on-screen indications. Press again to make the indications disappear.

Operating the TV Using the Buttons on the TV

With the buttons on the TV, you can adjust or select the functions as follows:

Press ◢+/– D to adjust the volume.
Press P+/– C to select programme numbers or to turn the TV on from the standby mode.
Press ⊕ F to select the input source.
Press ▶▶| E to preset channels automatically.

Advanced TV Operations

Operating the Menu System

You can adjust picture and sound, preset channels to programme positions and utilise other convenient features by using the following menu system.

Adjusting the Picture and Sound

Although picture and sound are adjusted at the factory you can adjust them to suit your own taste.

1 **Press MENU [7].**
The MENU screen appears.

2 **Press the red button [17] to select PICTURE or the green button [17] to select SOUND.**

3 **Press the respective colour button [17] to select an item.**

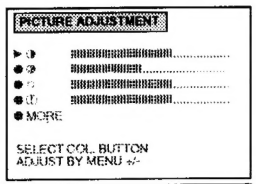
4 **Press MENU +/– [9] to adjust.**

5 **Press MENU [7] twice or wait until the menu displays disappear automatically to return to the normal screen.**

Note: When selecting menus, the picture becomes darker. If, however, an item in the PICTURE ADJUSTMENT menu is selected, normal level of TV picture is restored to allow the best adjustment.

PICTURE ADJUSTMENT

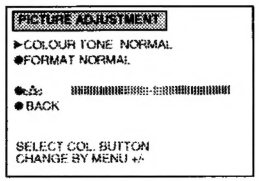
(First Page)



Press colour button	Effect
Red: **For Picture** ◑	Less —+— More
Green: **For Colour** ❁	Less —+— More
Yellow: **For Brightness** ☼	Darker —+— Brighter
Blue: **For Sharpness** ◫	Softer —+— Sharper
White:	Next page of PICTURE ADJUSTMENT

PICTURE ADJUSTMENT

(Second Page)

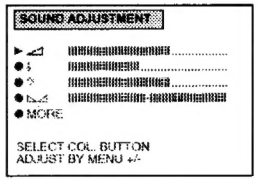


Press colour button	Effect
Red: **For Colour Tone**	Normal -> Warm (reddish colour tone) -> Cool (blueish colour tone)
Green: **For Format**	Using [20] select mode:
	4:3 for normal ratio 4:3
	Smart for imitation of wide screen effect (16:9) for 4:3 broadcasts
	Wide for 16:9 broadcasts
	Zoom for imitation of wide screen effect (16:9) for movies broadcast in cinemascopic format
	Zoom ⇧ (for scroll-up of screen to show sub-title)
	Whilst in zoom mode, press MENU +/–[9] to select Zoom ⇧. Press MENU +/–[9] again to return to zoom mode
Blue: **For Hue control** (only for NTSC video signals)	Reddish —+— Greenish
White:	Back to first page of PICTURE ADJUSTMENT

Note: Press →•← [8] on the Remote Commander to reset to the factory preset levels for picture and sound.

SOUND ADJUSTMENT

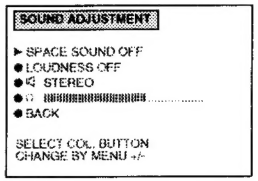
(First Page)



Press colour button	Effect
Red: **for Volume**	Less —+— More
Green: **for Treble**	Less —+— More
Yellow: **for Bass**	Less —+— More
Blue: **for Balance**	More left - more right
White:	Next page of SOUND ADJUSTMENT

SOUND ADJUSTMENT

(Second Page)



Press colour button	Effect
Red: **for Space Sound**	OFF: normal sound ON: for a special acoustic sound effect
Green: **for Loudness**	OFF: normal sounds ON: when listening to music broadcast
Yellow: **for Stereo:**	Stereo -> Mono A (left channel) - > Mono B (right channel) -> Mono
Blue: **for Headphone volume:**	Less —+— More
White:	Back to first page of SOUND ADJUSTMENT

Note: Press →•← [8] on the Remote Commander to reset to the factory preset levels for picture and sound.

Using Special Features

With your TV you can utilise special features such as Parental Lock or Sleep Timer.

1 **Press MENU [7].**
The MENU screen appears.

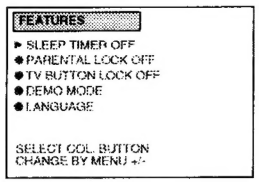
2 **Press the yellow button [17] to select FEATURES.**

3 **Press the respective colour button [17] to select an item.**

4 **Press MENU +/– [9] to change.**

5 **Press MENU [7] twice or wait until the menu displays disappear automatically to return to the normal screen.**

FEATURES



Press colour button	Effect
Red: **for Sleep Timer** (Automatic switch off function)	OFF -> 0:30 -> 1:00 -> 1:30 -> 2:00 (hours) After the selected time the TV set switches itself automatically into standby mode.
Green: **for Parental Lock** (For preventing children from watching programmes which you consider unsuitable)	OFF: Normal setting ON: The TV-channel you are watching is now blocked. In this way you can prevent undesirable broadcasts from appearing on the screen.
Yellow **for TV Button Lock**	OFF: Normal setting ON: The buttons on the TV do not function anymore. (The Remote Commander still operates)
Blue: **for Demo Mode**	ON: A sequence of menu pictures is displayed. Press any button on the Remote Commander to stop the function.
White: **for Language**	The SELECT LANGUAGE screen appears.

Advanced Presetting Functions

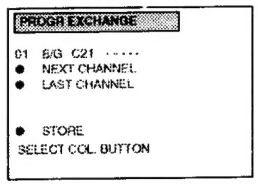
Exchanging Programme Positions

You can exchange the programme positions to a preferred order (example: exchange programme 09 (channel C21) with programme 15 (channel C24)).

1 Press MENU [7].
The MENU screen appears.

2 Press the white button [17].
The PRESET screen appears.

3 Press the yellow button [17].
The PROGR EXCHANGE screen appears.



4 Press the white button [17] repeatedly until the desired programme number (09) appears.

5 Press the red or the green button [17] repeatedly until the desired channel number (C24) appears.

6 Press the white button [17] to store.
Now the exchange has been completed. Channel C24 is tuned in to programme 09 and channel C21 is tuned in to programme 15.

7 Press MENU [7] twice to return to the normal screen.

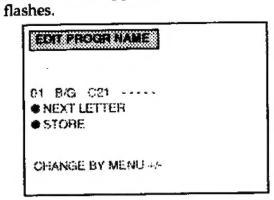
Editing Programme Names

You can edit the programme names up to five letters.

1 Press MENU [7].
The MENU screen appears.

2 Press the white button [17].
The PRESET screen appears.

3 Press the blue button [17].
The EDIT PROGR NAME screen appears.
The first character flashes.



4 Press MENU+/– [9] to edit the first letter.
The first letter changes as follows;

A ↔ B ↔ . . . ↔ Z ↔ 0 ↔ 1 ↔ . . . ↔ 9 ↔ "–" (space)

5 Press the red button [17] to move to the next letter.

6 Repeat steps 4 to 5, until the fifth letter is chosen.

7 Press the green button [17].
The programme name is stored, and the normal screen appears. To edit another programme name, repeat steps 1 to 7.

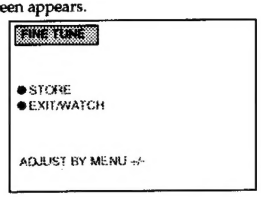
Fine Tuning

You can adjust the receiving condition by the FINE TUNE function.

1 Press MENU [7].
The MENU screen appears.

2 Press the white button [17].
The PRESET screen appears.

3 Press the white button [17] again.
The FINE TUNE screen appears.



4 Press MENU+/– [9] to adjust the receiving condition.

5 Press the red button [17] to store the adjustment, or press the green button [17] not to store.
Then the normal screen appears. If you have pressed the green button, the fine tuned condition is cancelled once you choose another programme.

Note: If the FINE TUNE screen disappears automatically before you press the red button [17], the fine tuned condition is not stored. Repeat steps 1 to 5.

Tuning in to a Channel Temporarily

You can tune in to a channel temporarily, even when it has not been preset.

1 Press C [16] on the Remote Commander. For cable channels, press C [16] twice.
The indicaton "C" ("S" for cable channels) appears on the screen.

2 Enter a double-digit channel number using the number buttons (e.g. for channel 23, first press 2, then 3).
The channel appears.
However, the channel is not stored.

Teletext Operation

TV stations broadcast teletext programmes via the TV channels. For basic operation of teletext, use the simple side of the Remote Commander. For the advanced features of teletext, use the buttons indicated in green on the full function side of the Remote Commander.

Basic Teletext Operation

Switching Teletext on and off

1 Select the channel which carries the teletext service you wish to view.

2 Press ▤ [11] to display Teletext.
If no teletext signal is broadcast, the indication P100 is displayed on a black screen.

3 Input three digits for the page number using the number buttons [4].
The numbers are displayed on the screen and the requested page appears in a few seconds.
Note: If you make a mistake, type in any three digits, then re-enter the correct page number.

4 Press ▢ [3] once or ▤ [11] twice to return to the TV mode.

Note: To change the teletext channels. First press ▢ [3] to return to the TV mode, then repeat steps 1 to 3.
Note: If the signal of a TV channel is weak, teletext errors may occur.

Advanced Teletext Operation

Using Fastext

With Fastext you can access pages with one button press. When a Fastext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons [6] on the Remote Commander.
Press the corresponding colour button [6] on the Remote Commander which corresponds to the colour-coded menu. The page will be displayed in a few seconds.

Requesting the Index page

Press ▤ [17]. The Index page appears.

Accessing the next or preceding page

Press ▤(PAGE +) or ▤(PAGE –) [18]. The next or the preceding page appears on the screen.

Superimposing the teletext display on the TV picture

Press ▤ [11] once if you are in text mode or press ▤ [11] twice if in TV mode.
To return to the normal teletext display press ▤ [11] twice.

Preventing a teletext page from being updated or changed

Press ⊕(HOLD) [2]. The HOLD symbol (⊕) appears on the screen and the selected subpage is held until you press ▤ [11] to cancel.

Enlarging the teletext display

Press ⊕ [13] once to enlarge the upper half. Press twice to enlarge the lower half. Press again to restore the normal display.

Revealing concealed information (e.g. answers to a quiz)

Press ⓘ(REVEAL) [14]. The information is revealed. Press ⓘ [14] again to conceal the information.

Watching TV while waiting for a requested page to be displayed

1 Request a new teletext page.

2 Press ⊠(TEXT CL) [12].
The TV programme is displayed and the symbol ▤ is displayed at the top of the page.
Note: When the requested page is available the page number is displayed at the top of the screen.

3 Press ▤ [11] to view the page.

Note: To cancel the request
Display the teletext page, then press ▤ [11]. The request is now cancelled. Press ▢ [3] to resume TV mode.

Using the Favourite Page system

You can store up to four of your favourite teletext pages per programme with the help of the Favourite page system. In this way you have quick access to the pages you watch frequently.

Storing the Favourite Pages

1 Select the page you would like to store using the number buttons [4].

2 Press ⇳ [15] twice.
The colour prompts at the bottom of the screen flash.

3 Press any of the colour buttons [6] on the Remote Commander to store the selected page.
The page is now stored on this button.

Repeat steps 1 to 3 for the other 3 pages available.

Displaying the Favourite pages

1 Press ⇳ [15].

2 Press the colour button [6] corresponding to the colour prompt onto which the desired page is stored.
The page is requested. (It may take a few seconds to be received).

Note: Step 1 must be taken before every favourite page selection, otherwise the normal Fastext facility operates.

Using the Time Function in the TV mode

Press ⊙ [12] to request the time. Press again to cancel the request.
Note: This function is available only when teletext is broadcast.

Connecting Other Equipment

You can connect optional audio/video equipment to this TV such as VCRs, video disc players, cameras, external speakers or stereo systems.

Connector	Acceptable input signal	Available output signal
1 M (AV1/RGB)	Audio/video and RGB signal	Audio/video signal from TV Tuner
2/2 L (AV2) (YC2)	Audio/video and S video signal	Audio/video signal from selected source
3/3 G H (AV3)	Audio/video signal and	No outputs
3/3 G I (YC3)	Audio/S video signal	
R/D/D/D– L/G/S/1 N	No inputs	Audio signal (variable)

To watch a video input picture, press 2 until the desired video input appears.
To return to the normal TV picture, press 2 repeatedly or press 3.

Note: If you have a decoder, connect it to 1 M.

Connecting a VCR Using the TV Aerial Terminal

Connect the aerial output of the VCR to the aerial terminal K of the TV. It is recommended to tune in the VCR signal to programme number "0". For details, see "Tuning in to Channels Manually" on page 18.

Note: S video input (Y/C input) I L
Video signals may be separated into Y (luminance or brightness) and C (chrominance) signals.
Separating the Y and C signals prevents them from interfering with each other and therefore improves the picture quality (especially luminance). This TV is equipped with 2 video input terminals through which these signals can be input directly.

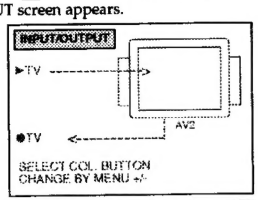
Checking and Selecting the Input and Output Sources Using the Menu

You can display a menu screen to see which input and output source are selected. You can also change the selection using this menu.

Checking the Input and Output Sources

1 **Press MENU 7.**
The MENU screen appears

2 **Press the blue button 17 to select INPUT/OUTPUT.**
The INPUT/OUTPUT screen appears.



Selecting an Input Signal

Press the red button 17 to select INPUT. Press MENU +/– 9 to select the desired input source.
You can select among the following sources:

TV↔AV1↔RGB↔AV2↔YC2↔AV3↔YC3

Selecting an Output Signal

The 2 / 2 connector L outputs the source input from the other connectors. Press the green button 17 to select OUTPUT. Press MENU +/– 9 to select the desired output source.

You can select among the following sources:

TV↔AV1↔AV2↔YC2↔AV3↔YC3

Note: Press MENU 7 twice or wait until the menu displays disappear automatically to return to the normal screen.

Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control most Sony remote-controlled video equipment such as: Beta, 8mm or VHS VCRs or video disc players.

Tuning the Remote Commander to the equipment

1 **Set the VTR 1/2/3 MDP selector 21 according to the equipment you want to control:**
VTR 1: Beta or VCR
VTR 2: 8mm VCR
VTR 3: VHS VCR
MDP: Video Disc Player

2 **Use the buttons 22 to operate the additional equipment.**

Note: If your video equipment is furnished with a COMMAND MODE selector: set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.
Note: If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.
Note: When you use the ● (record) button, make sure to press this button and the one to the right of it simultaneously.

Using Headphones

You can utilise headphones. Connect them to the headphone jack J to mute the sound from the speakers.
Note: You cannot control the sound adjustment except for volume.

For your information

Troubleshooting

Here are some simple solutions to problems which may affect the picture and sound.

No picture (screen is dark), no sound

- Plug the TV in.
- Press ⏻ A on the TV. (If the standby indicator B is lit, press 3 or any number button 4 on the Remote Commander.)
- Check if the selected video source is on.
- Turn the TV off for three or four seconds and then turn it on again using ⏻ A.

Poor or no picture (screen is dark), but good sound

- Press MENU 7 to enter the MENU screen, and press the red button 17, then adjust ◑ and ☼.

Good picture but no sound

- Press + 19.
- If 🔇 is displayed on the screen, press 🔇 1.

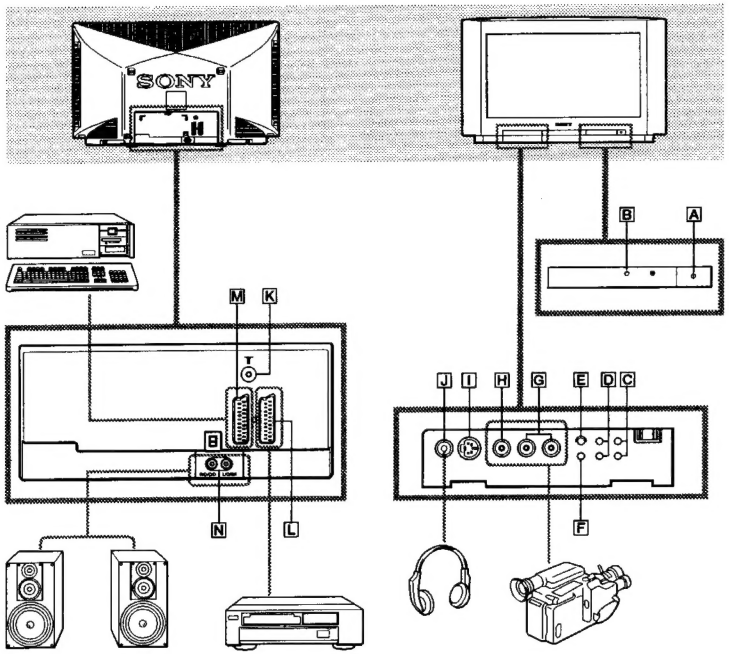
No colour for colour programmes

- Press MENU 7 to enter the MENU screen, and press the red button 17, then adjust ◕.

Remote Commander does not function

- Replace the battery.

If you continue to have problems, have your TV serviced by qualified personnel. Never open the casing yourself.


SONY
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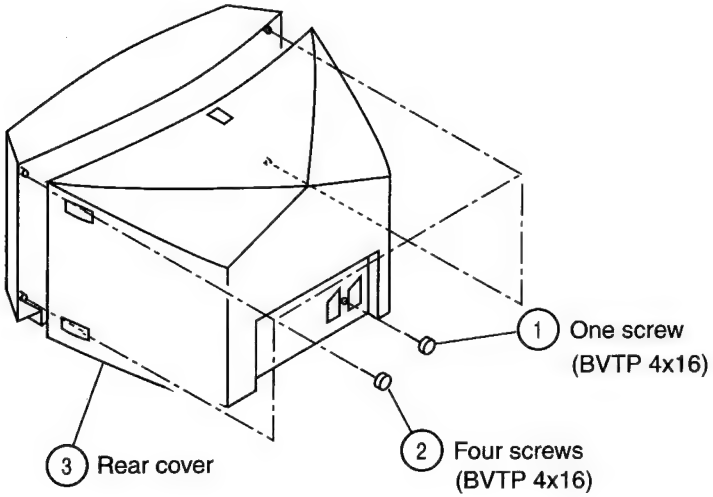
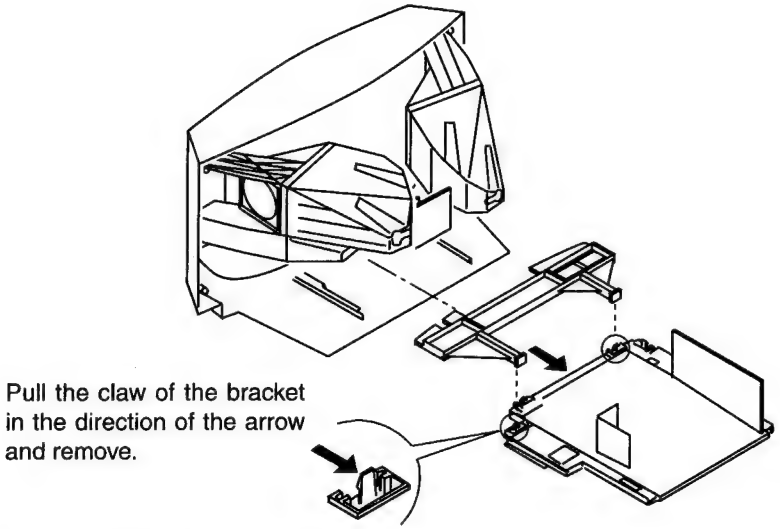
SECTION 2
DISASSEMBLY

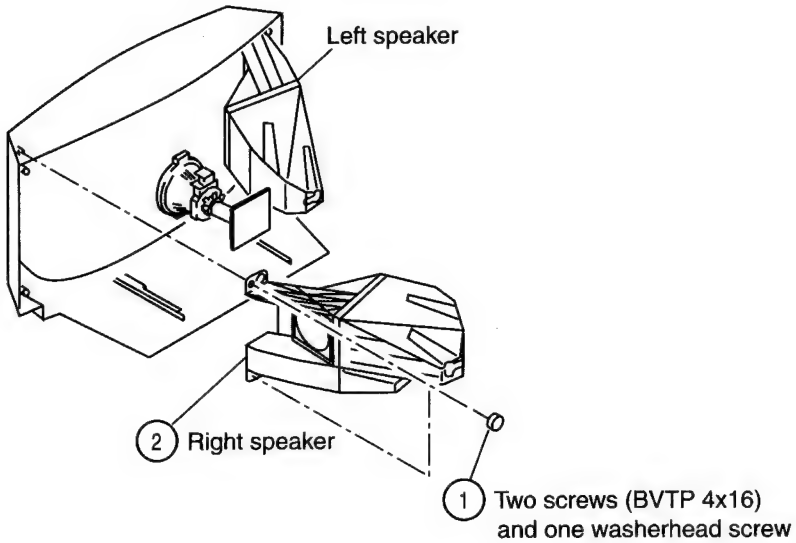
2-1. REAR COVER REMOVAL



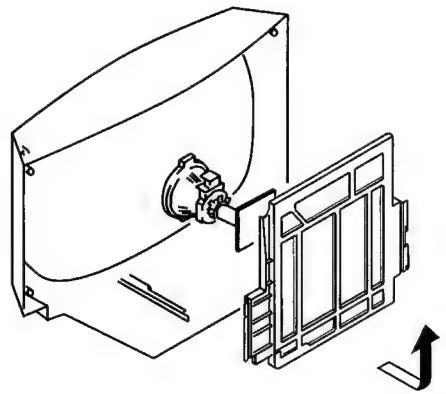
2-2. CHASSIS ASSY AND H BRACKET REMOVAL



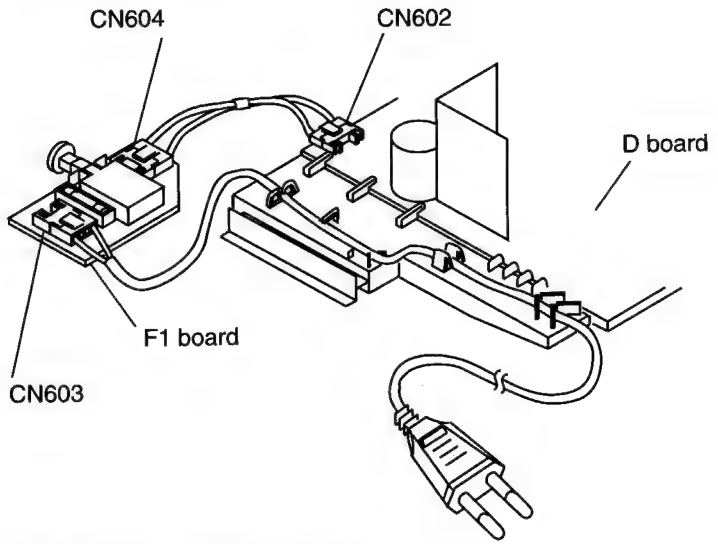
2-3. SPEAKER REMOVAL



2-4. SERVICE POSITION



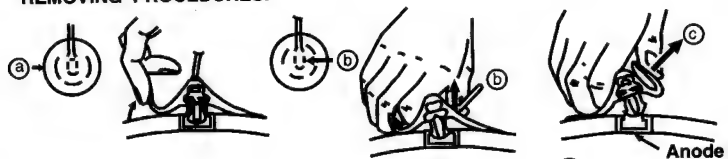
2-5. WIRE DRESSING



• REMOVAL OF ANODE-CAP

Note : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

*** REMOVING PROCEDURES.**



(1) Turn up one side of the rubber cap in the direction indicated by the arrow (a)

(2) Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)

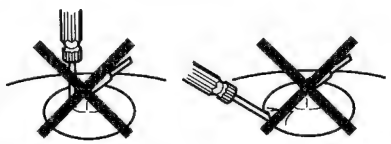
(3) When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c)

• HOW TO HANDLE AN ANODE-CAP

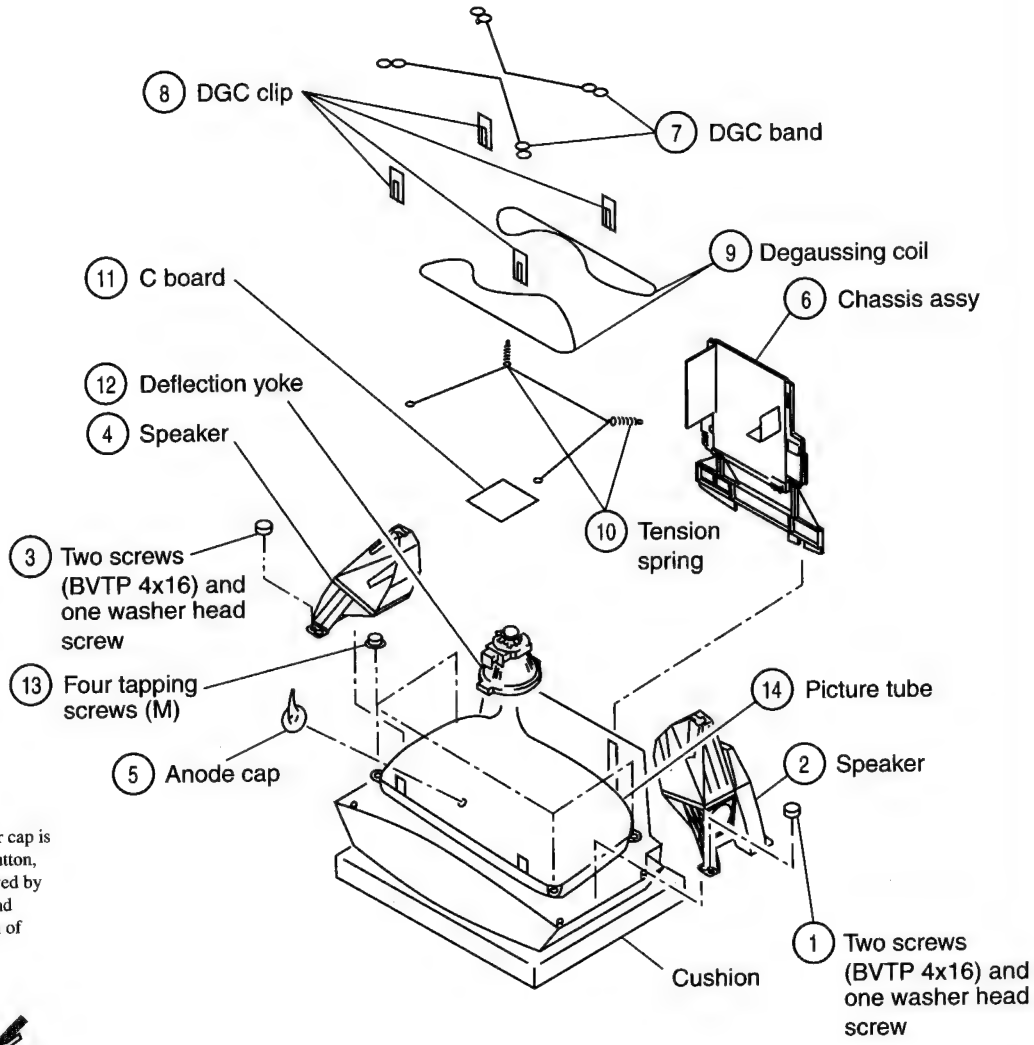
(1) Don't damage the surface of anode-cap with sharp shaped material !

(2) Don't press the rubber hardly not to hurt inside of anode-caps !
A metal fitting called as shatter-hook terminal is built into the rubber.

(3) Don't turn the foot of rubber over hardly !
The shatter-hook terminal will stick out or damage the rubber.



2-6. PICTURE TUBE REMOVAL



SECTION 3
SET - UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to these settings :

◑ Contrast ..... 80% (or remote control normal)
☼ Brightness 50%

- Carry out the following adjustments in this order :

1. Beam landing
2. Convergence
3. Focus
4. Screen (G2), White balance

Note: Testing equipment required.
1. Colour bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

Preparation:
- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
   CONTRAST, BRIGHTNESS } normal
2. Set the pattern generator raster signal to red.
3. Move the deflection yoke forward and adjust with the purity control so that the red is at the centre and the blue and the green take up equally sized areas on each side. (See Fig. 3-1 - 3-3)
4. Move the deflection yoke forward and adjust so that the entire screen becomes red. (See Fig. 3-1)
5. Switch the raster signal to blue, then to green and verify the condition.
6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig. 3-4)

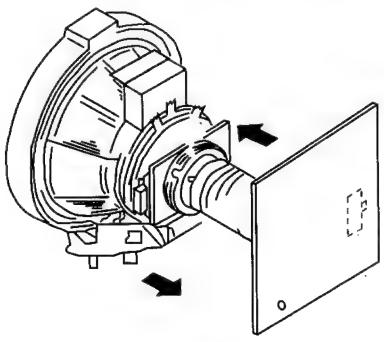


Fig. 3-1

Fig. 3-2

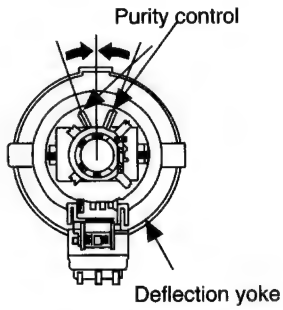
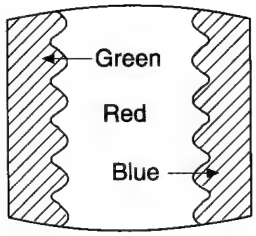


Fig. 3-3



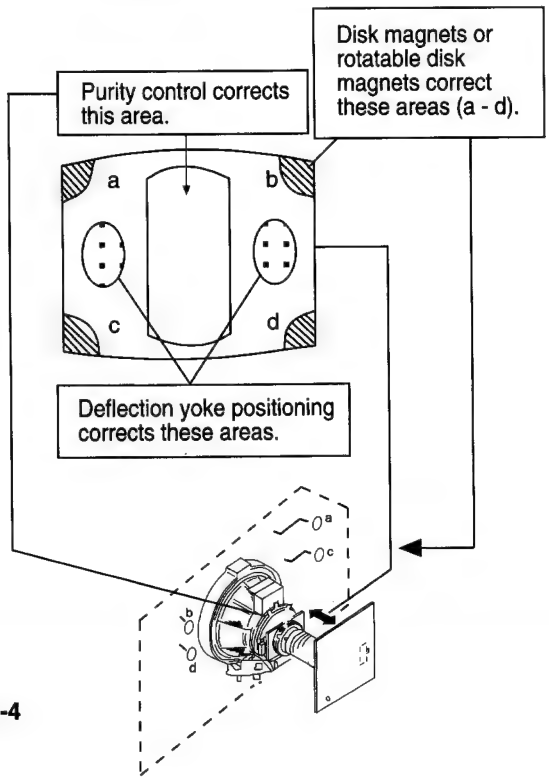


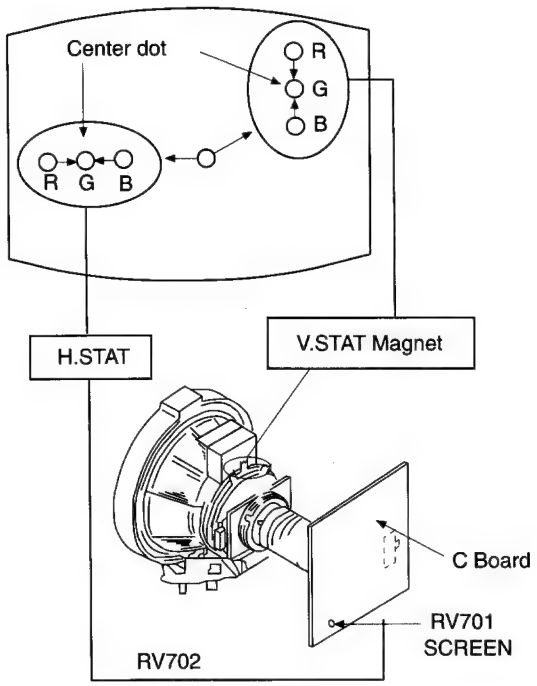
Fig. 3-4

3-2. CONVERGENCE

Preparation:

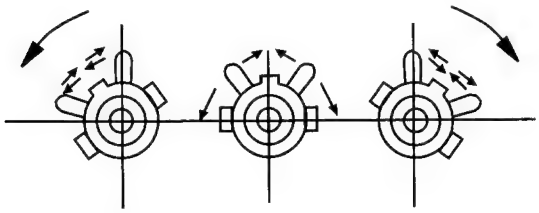
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide a dot pattern.

(1) Horizontal and vertical static convergence

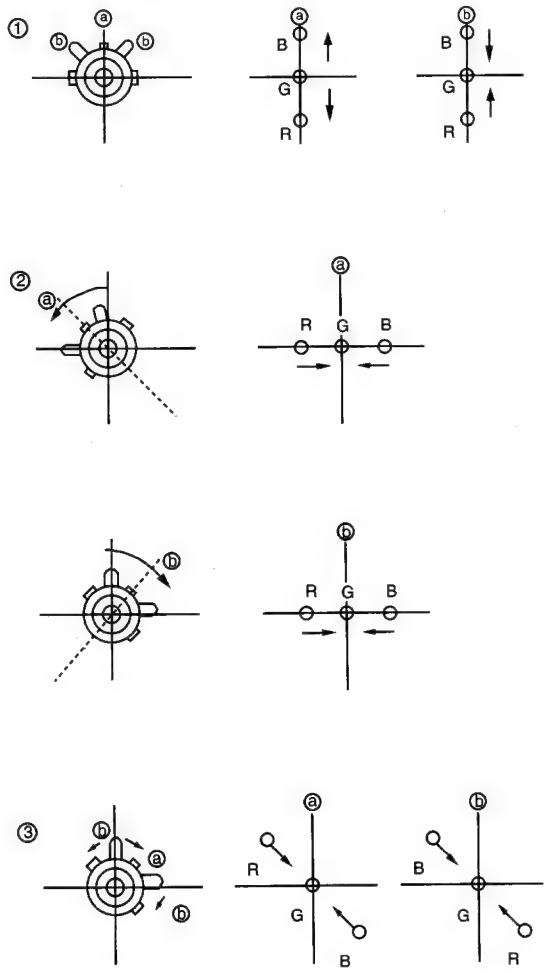


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the centre of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the centre of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the centre of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

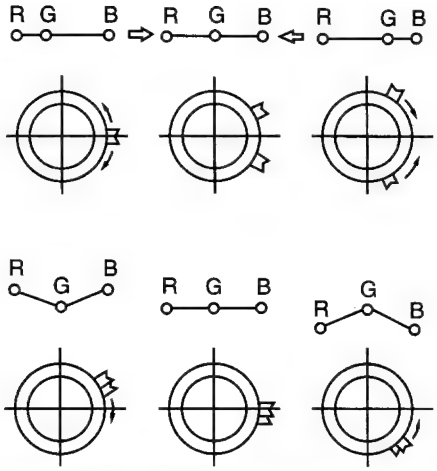
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

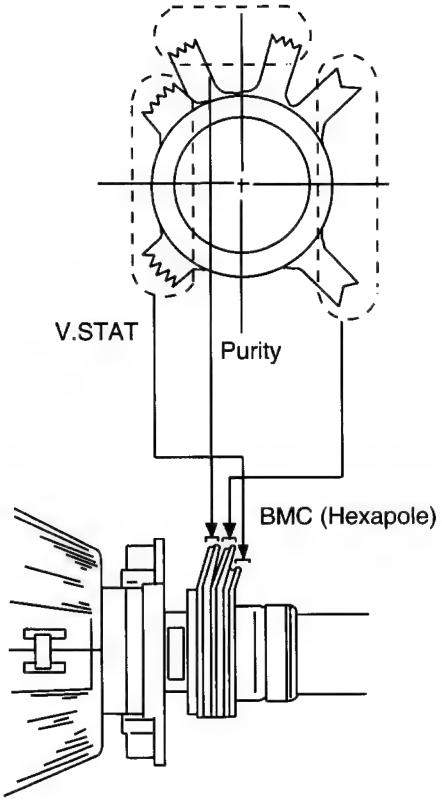


4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet





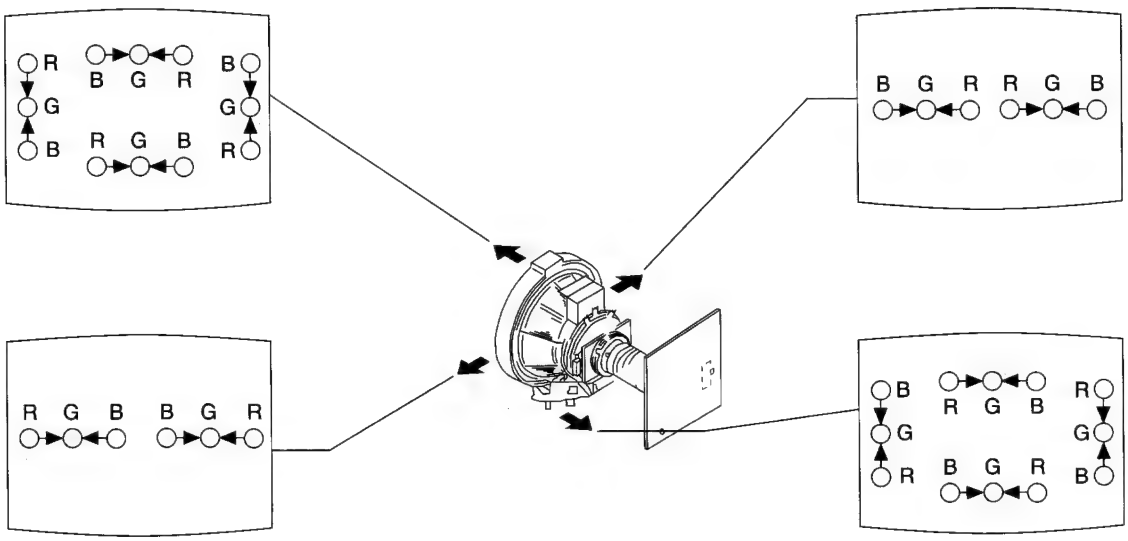
- The respective dot position resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the centre of the screen (by moving the dots in the horizontal direction).

(2) Dynamic convergence adjustment.

Preparation:

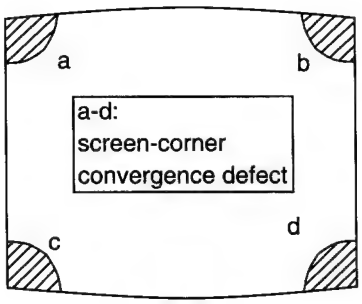
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

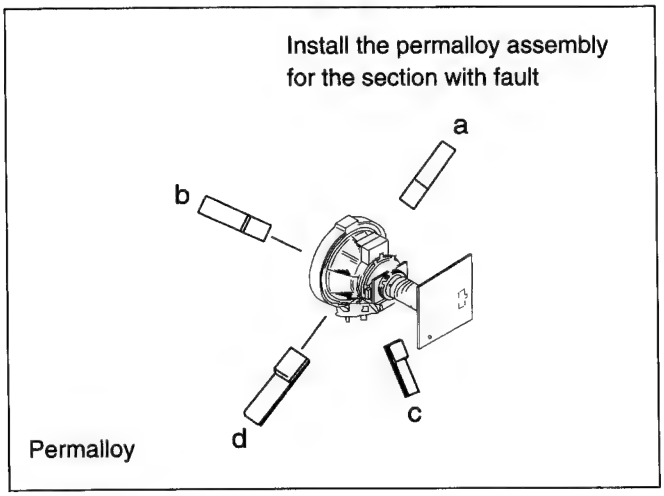
1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Re-install the deflection yoke spacer.



(3) Screen corner convergence.

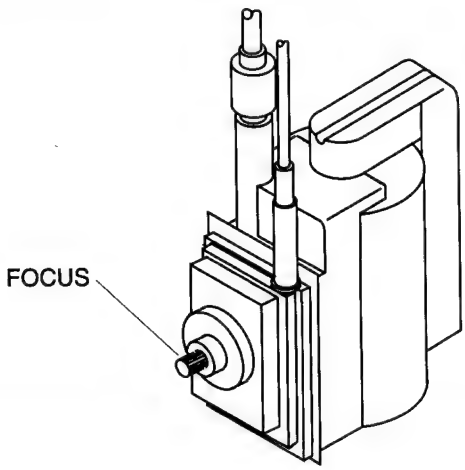
If you are unable to adjust the corner convergence properly, correct them with the use of permalloy assemblies.





3-3. FOCUS

Adjust the focus to optimize the screen.



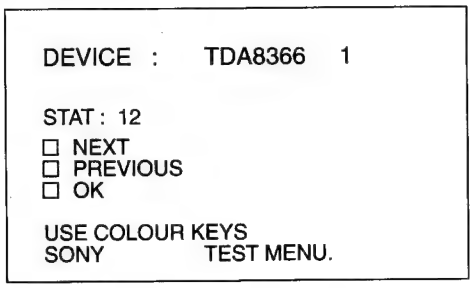
3-4. SCREEN (G2), WHITE BALANCE

Screen G2 Setting

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 180V DC to the R,G, and B cathodes with an external power supply.
4. While watching the picture, adjust G2 control RV701 (Screen) to the point just before the return lines disappear.

White balance adjustment

1. Receive an all-white signal.
2. Enter into service mode. (Refer to the section 4 "Electrical Adjustment" on how to enter service mode.)
3. Select TDA8366 1 on menu.



4. Press the White button on the Remote Commander to enter into the device Menu.
5. Press the Red button 10 times "Next" "Next" "Next" to select HWB RED, adjust to 32.
6. Press the Red button to select HWB GREEN, adjust with the + and - menu buttons so that the white balance becomes optimum.
7. Press the Red button to select HWB BLUE, adjust with the + and - menu buttons so that the white balance becomes optimum.
8. Press the TV button twice on the Remote Commander to store the data and return to TV operation.

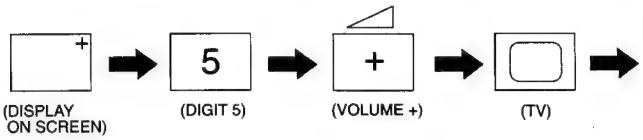
SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander RM-837.

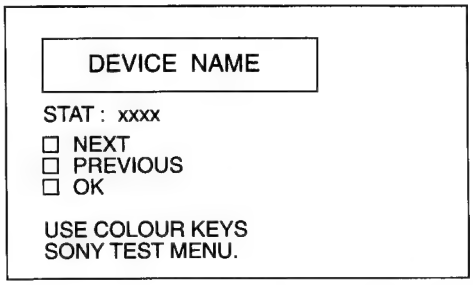
HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set and enter into standby mode.
2. Press the following sequence of buttons on the Remote Commander.

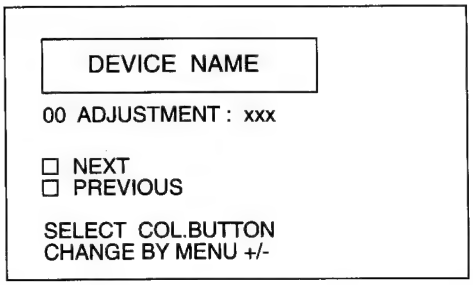


"TT " will appear in the top right corner of the screen. Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.



4. Press the Red (Next) and Green (Previous) buttons to select the device corresponding to the adjustment item from the table. Then press the White button (OK).



5. Press the Red (Next) or Green (previous) buttons to select the adjustment item. Then press the ▽ and △ buttons to change the data to comply with each standard.

6. Turn off the power to quit the service mode when adjustments are completed.

Initial Conditions for setup of TDA8366, TDA6612, TDA6622 and SAA7283.

TDA8366 1	INIT VALUE	TDA8366 2	INIT VALUE
Hue	31	Interlace	00
H Shift	Adj	Sync Mode	00
H Size	Adj	Col Dec	00
Pin Amp	Adj	Vert Div	00
Corn Pin	Adj	Vid ID	00
Tilt	Adj	EHT Track	01
V.Linear	Adj	En V Grd	00
V.Size	Adj	Serv Blk	00
S.Corr	Adj	OVP Mode	00
V.Cent	Adj	Aspect R	00
HWB Red	Adj	Start Freq	00
HWB Green	Adj	Y/C Input	00
HWB Blue	Adj	PAL/NTSC	00
Peaking	8	Xtal PLL	00
Bright	32	Y Delay	07
Colour	32	RGB Blk	00
Picture	37	Noise Cor	00
AGC Set	00	Fast Blk	01
Srce Sel 1	00	AFC Wind	00
Srce Sel 2	00	IF Sensty	00
Time Con	03	Mod Std	00
Xtal Ind	03	Vid Mute	01
FF Freq	02		

TDA6612 (TDA6622 UK models)	INIT VALUE	TDA6612 (TDA6622 UK models)	INIT VALUE
MPX Per	00	Mute 2	01
Quasi St	00	C1/2LS	00
Bass Exp	00	C1/2KH	00
H Pulse	00	Mono	01
Matrix St	00	Scart	00
Bypass	00	Scart D	00
Vol L Sp	07	AM	00
Vol R Sp	07	SAA7283	INIT VALUE
Vol HP	00	Mon M1/M2	01
Pll Sync	00	DM Select	01
Mute 3	01	SSWIT 123	07
Treble	08	Port 2	00
Bass	09	Mute Def	00
X Talk Adj	Adj	AMDIS	00
Mute 1	00	E Max	80
		E Min	01

4-2. TEST MODE 2 :

Is available by pressing Test button twice, OSD 'TT ' appears. The functions described below are available by pressing the two numbers. To release the Test Mode 2, press 0 twice, or switch the TV into Stand-by Mode.

00	switch Test Mode 2 off
01	picture maximum
02	picture minimum
03	Volume 35%
04	Volume 50%
05	Volume 65%
06	Volume 80%
07	Ageing Condition (Volume min., Picture max., Brightness max.
08	Shipping Condition (Analog Values are RESET due to factory setting, Prog 1 is selected, TT Mode is switched off)
09	"Menu" Flag request
10	Tenth entry is deleted
11	dummy
12	dummy
13	dummy
14	Forced AV 16:9 detection on/off
15	Read factory setting from NVM Reads Volume, Balance, Treble, Bass, Brightness, Contrast, Hue, Sharpness, Colour values from ROM to the actual used values (Last Power Memory)
16	Save actual used values as RESET values Memorize actual used values Balance, Treble, Bass, Hue, Sharpness at RESET position in NVM.
17	Preset Label for AV Sources
18	RGB Priority on/off
19	Clear all preset labels
20	Tenth entry is deleted
21	Sub Contrast
22	Sub Colour
23	Sub Brightness
24	Set destination = U RGB Priority = Off
25	Set destination = D RGB Priority = Off
26	Set destination = B RGB Priority = On
27	Set destination = K RGB Priority = Off
28	Set destination = L RGB Priority = Off
29	Set destination = E RGB Priority = Off
30	Tenth entry is deleted.
31	Set destination = A RGB Priority = on.
32	Switch between destination DN normal mode and destination DT Turkish mode.
33	Auto AGC.
34	N/S pin adjust.
35	Manual AGC adjust.
36	dummy
37	dummy
38	28" version on/off.
39	dummy
40	Tenth entry is deleted.
41	Re-initialise NVM.
42	Production use only.
43	Initialise Geometry settings.
44	Initialise all favorite pages to be 100.
45	Channel locks off.
46	IR channel presetting mode. The channel presetting can be done by a special IR transmitter.
47	Store geometry settings for 4:3 and smart.
48	Set NVM testbyte to 44h.
49	Erase the NVM Testbyte (this byte detects already stored NVM's). After selecting this function, switch TV off and on, the NVM will be preset by the micro controller.

In Test Mode the Menu display is switchable by the Speaker-Off button.

Note : For Test Modes 41 - 49 it is necessary to ensure that the TV is set to Prog 59.

SUB BRIGHTNESS ADJUSTMENT

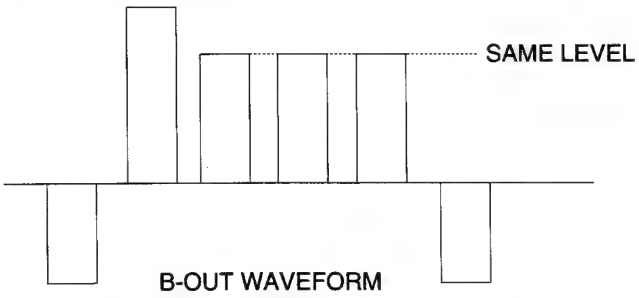
1. Input a Phillips pattern.
2. Enter into service mode and press 23.
3. Adjust data so that 0-IRE of grey scale and CUT-OFF 20-IRE are only slightly visible on screen.

SUB CONTRAST ADJUSTMENT

1. Input a video that contains a small 100% area on a Black Background.
2. Enter into service mode and press 01 to have PIC max followed by 21.
3. Connect oscilloscope to pin (1) of CN703 (R OUT) and adjust HWB Red data of TDA8366 1 to obtain 2.3Vp-p.

SUB COLOUR ADJUSTMENT

1. Input a PAL colour bar signal.
2. Connect an oscilloscope to pin (3) of CN703 (B OUT) on the C board.
3. Enter into service mode and press 22.
4. Adjust data so that the right sides of the waveform are set to the same level.



STEREO SEPARATION ADJUSTMENT

1. Input a 1KHz stereo signal to the L-ch and a 400Hz stereo signal to the R-ch.
2. Enter into service mode and select the "Test Menu" to be TDA6612. (TDA6622 UK models.)
3. Select the Stereo Xtalk Adjustment Menu, by using the Red (Next) and Green (Previous) buttons.
4. Monitor the Scart 1 L-channel output and adjust the data so that the R-channel sound is not detected in the L-channel.

I.F. COIL ADJUSTMENT (T101) - B/G, D/K, I AND L STANDARD FOR CONTINENTAL MODELS.

1. Apply a 38.9MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for negative modulation.
3. Measure the voltage at the AFT test point and adjust (T101) to obtain 2.4V +/- 0.2V.

I.F. COIL ADJUSTMENT (T101) - I, STANDARD FOR UK MODELS.

1. Apply a 39.5MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for negative modulation.
3. Measure the voltage at the AFT test point and adjust (T101) to obtain 2.4V +/- 0.2V.

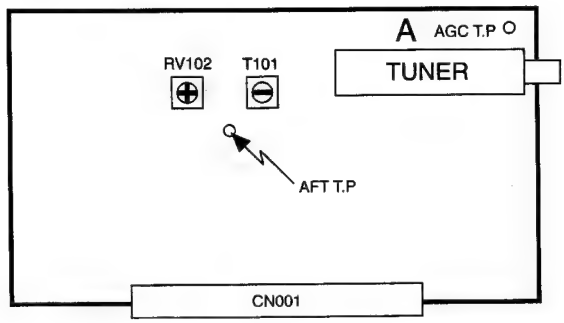
L, BAND 1 ADJUSTMENT (RV102) - L, STANDARD FOR FRENCH MODELS.

1. Apply a 33.95MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for positive modulation and system L band 1.
3. Measure the voltage at the AFT test point and adjust (RV102) to obtain 2.4V +/- 0.2V.

Note : Only adjust RV102 after T101 has been correctly adjusted.

AGC ADJUSTMENT

1. Receive an off- air signal.
2. Enter the service mode, ("Test" "Test") and 35.
3. Adjust the data so that there is no snow or cross - modulation visible on the screen.
4. Change the receiving off-air channel, and confirm the above status.



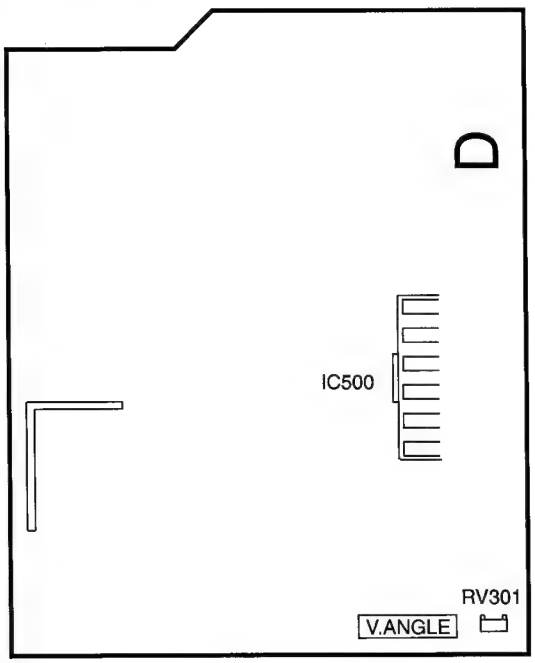
- A Board component side -

DEFLECTION SYSTEM ADJUSTMENT

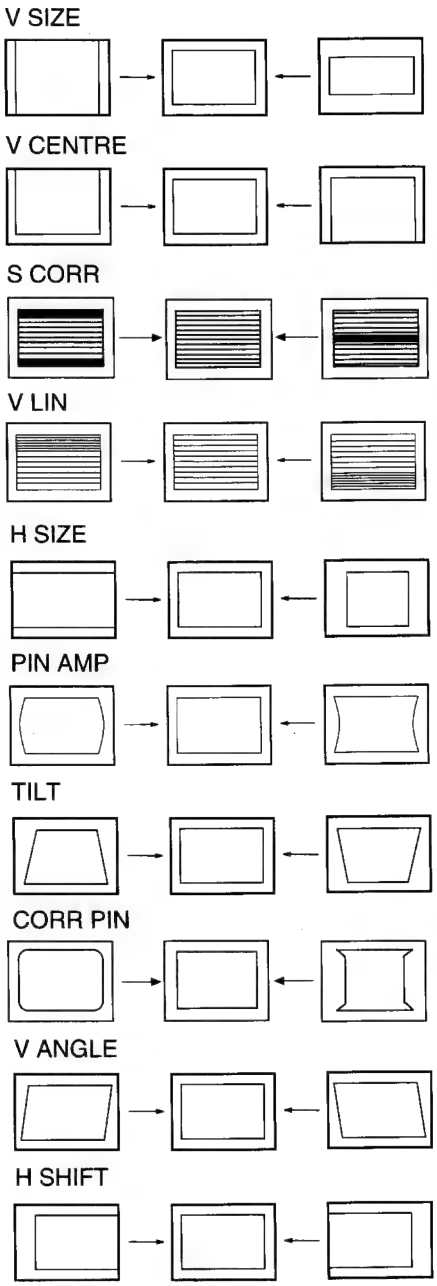
1. Enter into service mode.
2. Select and adjust each item in order to obtain the optimum image.

Item No	Adjustment item.	Data Amount
03	H SHIFT	ADJ.
04	H SIZE	ADJ.
05	PIN AMP	ADJ.
06	CORR PIN	ADJ.
07	TILT	ADJ.
08	V LINEAR	ADJ.
09	V SIZE	ADJ.
0A	S CORR	ADJ.
0B	V CENTRE	ADJ.

Note : V ANGLE is adjusted by a Variable Resistor on the 'D' Board (RV301)



- D Board Component Side -



4-3. BE-3B SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-3B chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the led (Series of flashes which must be counted) See Table 1, non fatal errors are reported with this method.

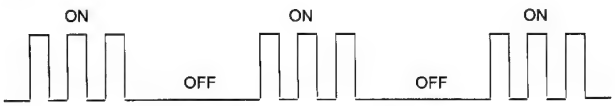
If a fatal error is found the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue operation.

Table 1

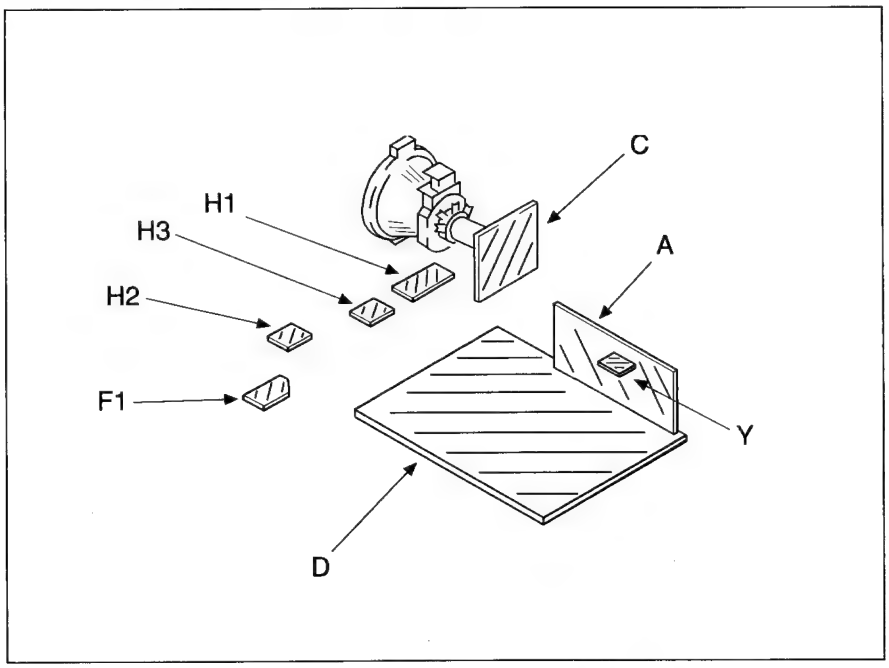
Device	LED Error Count	Fatal Error
NVM	2 .. 9	√
Teletext	10	
Jungle	11	√
Video_sw	12	
Tuner	13	√
Nicam	14	
Audio_cont	15	√

Flash Timing Example : e.g. error number 3.

Stby LED



5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  kΩ = 1000Ω , MΩ = 1000KΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm
Rating electrical power ¼ W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : earth - ground.
- : earth - chassis.
- : no mounted.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

Note : Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

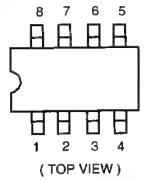
Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	:	ADJUSTABLE RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

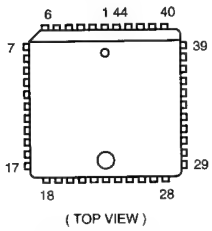
- Readings are taken with a colour-bar signal input.
- Readings are taken with 10MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- ——— : B+ bus.
- : signal path. (RF)

5-4. SEMICONDUCTORS

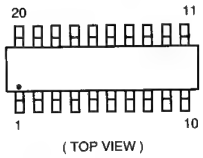
BA7046F



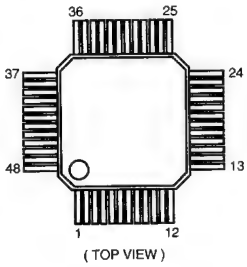
CF70200FN-R/C
CF70203FN-F
CF70204FN-R
CF70211FN-R



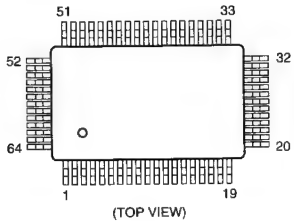
CF72416DW-R
TDA8395T



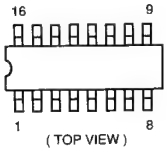
CXA1855Q



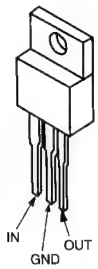
CXP85340A-116Q-TL
CXP85340A-117Q-TL
SAA7283
TDA8366H/N3



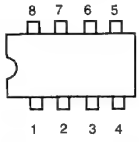
HD14053BFP
MC14053BF
TC74HC221AF



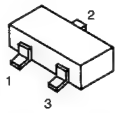
LM2940CT-5.0
LM2940T-9.0
MCT7812CT
TA7812S
µPC2405HF



LM393P
M5216P
TDA2822M
µPC393C

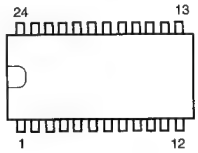


MN1382S

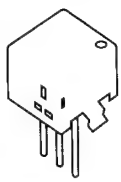


1 : OUT
2 : VDD
3 : VSS

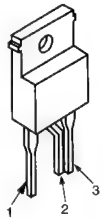
SAA4981T



SBX1790-51

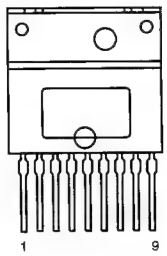


SE135N-LF12

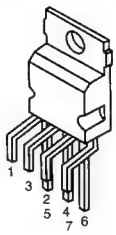


1 V OUT
2 V IN
3 GND

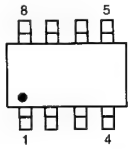
STR-S6708



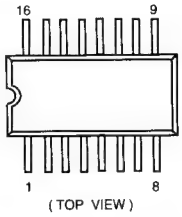
STV9379



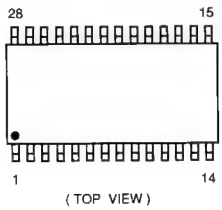
ST24E32M6



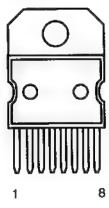
TDA4665T



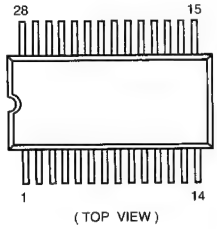
TDA6612-5X-GEG
TDA6622-5X-GEG



TDA7264

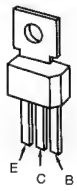


TDA9813T
TDA9814T/V2



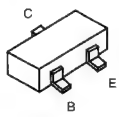
TL750L05CLPR

BF871

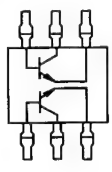


DTA144ES
DTC114ES
DTC143TS
DTC144ES

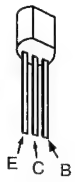
DTC114EK
DTC123EK
DTC144EK
2SA1037K
2SA1162-G
2SC2412K



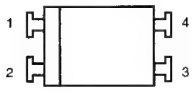
IMX1



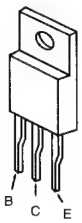
JA101
JC501
2SA1091-O
2SA733-K
2SC2389S-R
2SC2551-O
2SC2808S-R



TLP721-GR

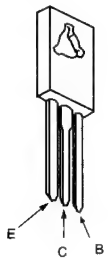


2SA1667
2SC3852A

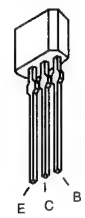


2SB1186A
2SC4793
2SD1763A

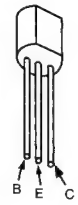
2SB1357EF
2SC2688-LK



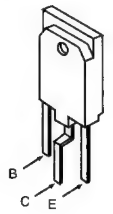
2SC2785-HFE



2SC3779C

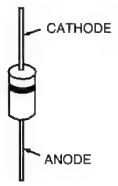


2SC4927-01

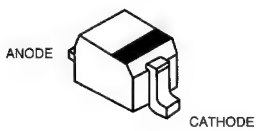


2SD2096-EF

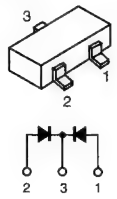
AU-01Z-V1	GP08D
EGP20G	RGP02
EL1Z	RGP10GPKG23
EM1-V1	RGP15GPKG23
EU-1-V1	RU3YX-LF-C4
EU-1Z	RU-3YX-V1
FML-G12S	RU4



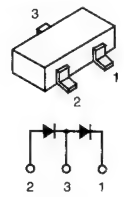
BAS216
DTZ33B
MA8330
1SS355
1SV214



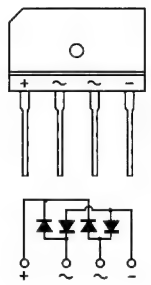
DAN202K
UMZ12N



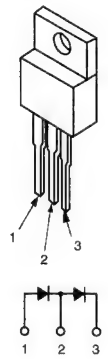
DA204K



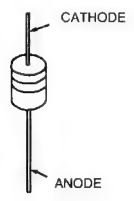
D4SB60L



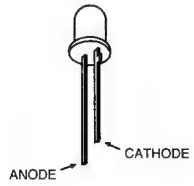
FMS-3FU



MTZJ-3.6A	MTZJ-9.1C
MTZJ-3.9B	MTZJ-39C
MTZJ-4.7B	RD3.9ESB2
MTZJ-5.1B	RD5.1ESB2
MTZJ-5.6B	RD5.6ESB2
MTZJ-6.8C	RD6.8ESB2
MTZJ-7.5C	RD7.5ESB2
MTZJ-9.1	RD9.1ESB3
MTZJ-9.1A	1SS133

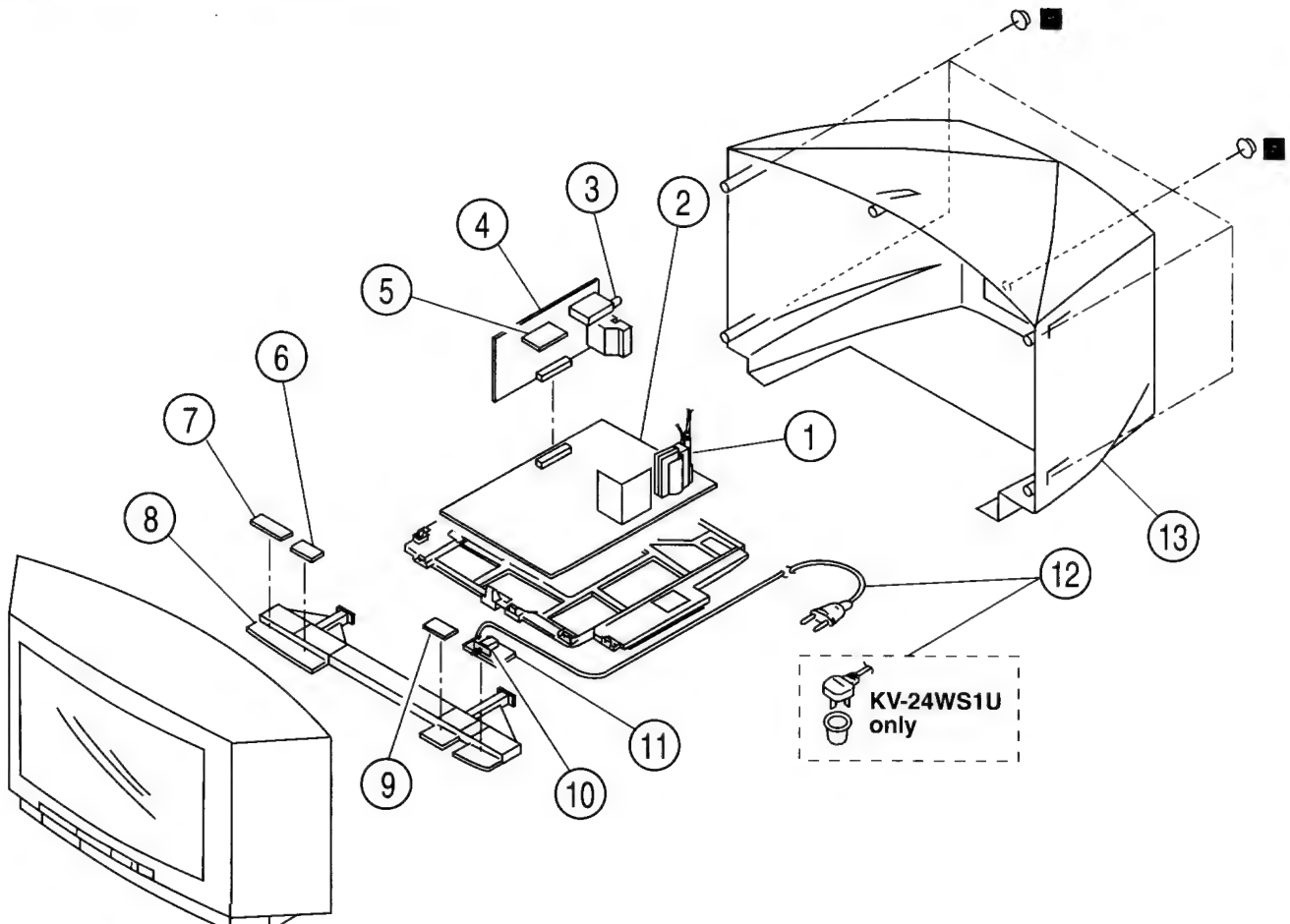


SLA-570KT3F



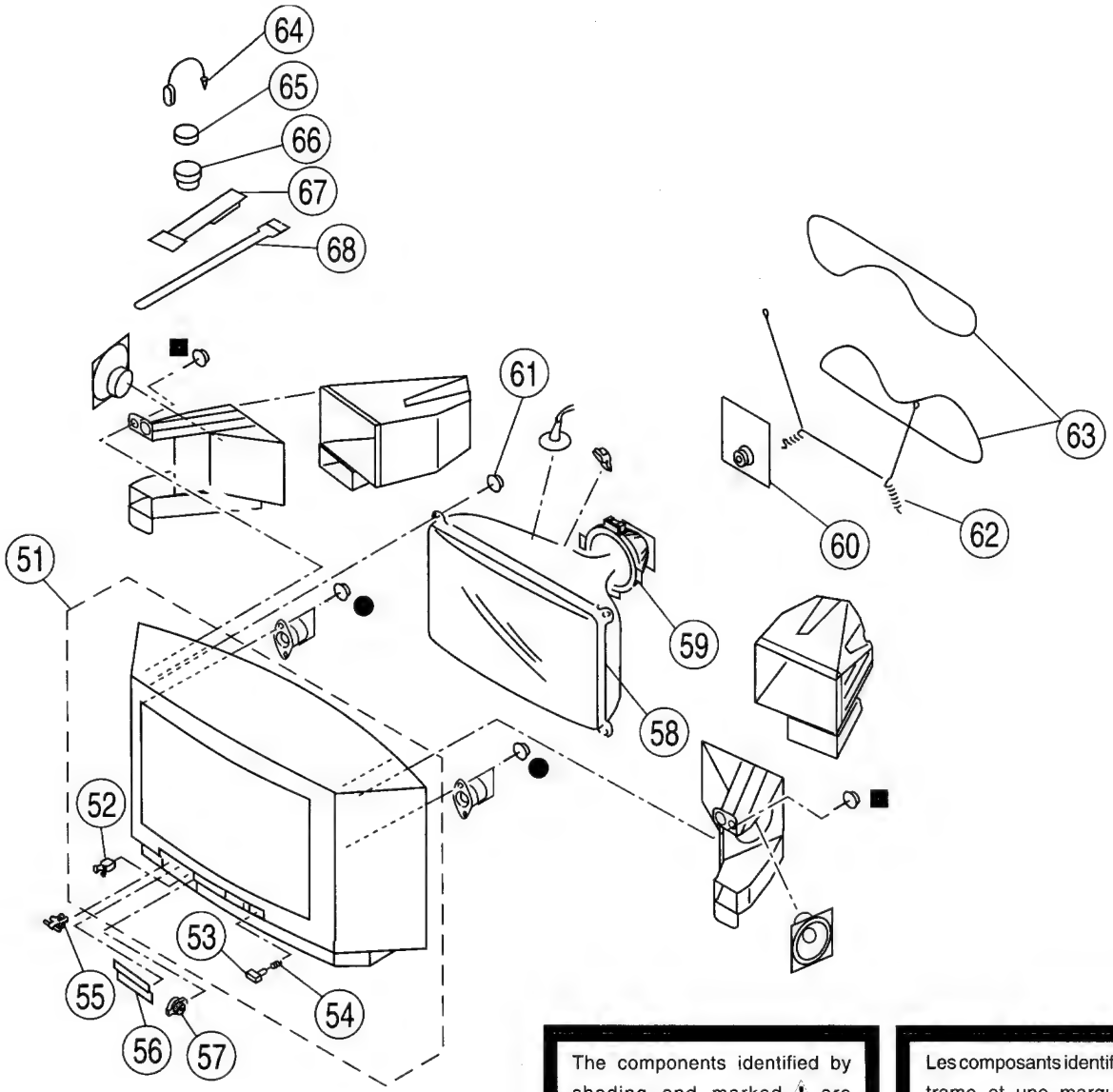
6-1. CHASSIS

■ : BVTP 4X16 7-685-663-79



6-2. PICTURE TUBE

■ : BVTP 4X16 7-685-663-79
● : BVTP 4X8 7-685-659-71



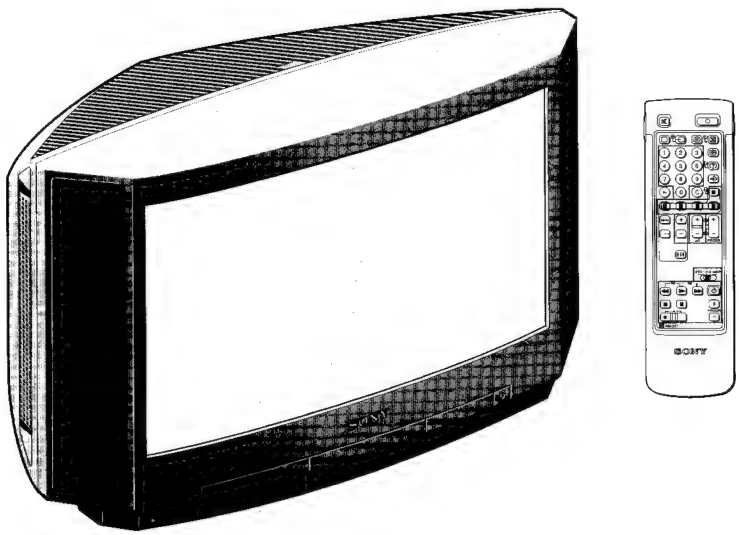
The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

SERVICE MANUAL

BE-3B CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-28WS1A	RM-837	Italian	SCC-G81R-A
KV-28WS1B	RM-837	French	SCC-G85P-A
KV-28WS1D	RM-837	AEP	SCC-G77R-A
KV-28WS1E	RM-837	Spanish	SCC-G82Q-A
KV-28WS1K	RM-837	OIRT	SCC-G86H-A
KV-28WS1R	RM-837	OIRT	SCC-G86Q-A
KV-28WS1U	RM-837	UK	SCC-G87K-A



MICROFILM

TRINITRON® COLOR TV

SONY®

ITEM MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R1-R12 UHF: R21-R69	PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
French	L, B/G/H, I	L VHF: F2-F10 UHF: F21-F69 Cable TV: B-Q B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H UHF: H1, H2 I B21-69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
AEP	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R1-R12 UHF: R21-R69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
Spanish	B/G/H	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2	PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
OIRT	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 Cable TV (1): S1-S41 Cable TV (2): S01-S05, M1-M10, U1-U10 ITALY VHF: A-H UHF: H1, H2 D/K VHF: R1-R12 UHF: R21-R69	SECAM, PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)
UK	I	UHF: 21-69	PAL NTSC 3.58 (video input only) NTSC4.43 (video input only)

MODEL	Italian	French	AEP	Spanish	OIRT	UK
Power Consumption	117W	117W	117W	117W	117W	169W

SPECIFICATIONS

Picture Tube — Super Trinitron Wide
Approx. 71 cm (28 inches)
(Approx. 67 cm picture measured diagonally)
110° -deflection

Rear/Front Terminals

[REAR]

- 21-pin Euro connector (CENELEC standard)
  - Input for audio and video
  - Input for RGB
  - Outputs of TV video and audio
- S→2/←S2 21-pin Euro connector (CENELEC standard)
  - Input for audio and video
  - Input for S video
  - Outputs of TV video and audio (selectable)
- → Audio outputs (variable) - phono jacks

[FRONT]

- →S3 Video input-phono jack
- →3 Audio input-phono jacks
- →S3 S video input-4-in DIN
- Ω Headphone jack : stereo mini jack

Sound output	2x12W RMS 2x30W Music power
Dimensions	Approx. 798x497x531 mm
Weight	Approx. 44 kg
Supplied accessories	RM-837 Remote Commander (1) IEC designated batteries (2)

Other features
- Fastext
- Toptext (KV-28WS1A/28WS1B/28WS1D/28WS1E/28WS1K/28WS1R)
- Nicam (KV-28WS1B/28WS1E/28WS1U)

[RM-837]

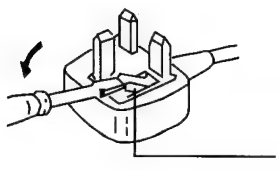
Remote control system	infrared control
Power requirements	1.5V dc 1 battery IEC designation R6 (size AA)
Dimensions	Approx. 65x225x21 mm (w/h/d)
Weight	Approx. 157g (Not including battery)

Design and specifications are subject to change without notice.

Item \ Model name	KV-28WS1A	KV28WS1B	KV-28WS1D	KV-28WS1E	KV-28WS1K KV-28WS1R	KV-28WS11U
Pal Comb	OFF	OFF	OFF	OFF	OFF	OFF
PIP	OFF	OFF	OFF	OFF	OFF	OFF
RGB Priority	ON	ON	ON	ON	ON	ON
Woofer Box	OFF	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	ON	ON	ON	ON	ON	ON
Norm B/G/H	ON	ON	ON	ON	ON	OFF
Norm I	OFF	ON	OFF	OFF	OFF	ON
Norm D/K	ON	OFF	ON	OFF	ON	OFF
Norm AUS	OFF	OFF	OFF	OFF	OFF	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF	OFF	OFF
Language Preset	Italian	French	German	Spanish	OIRT	English

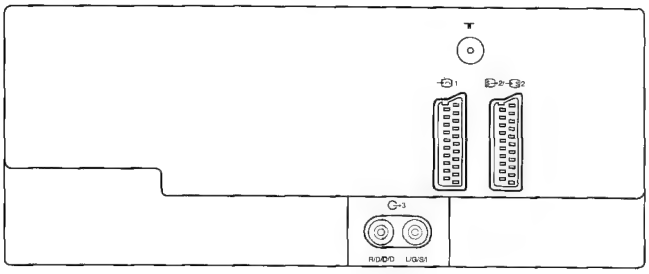
WARNING (KV-28WS1U only)

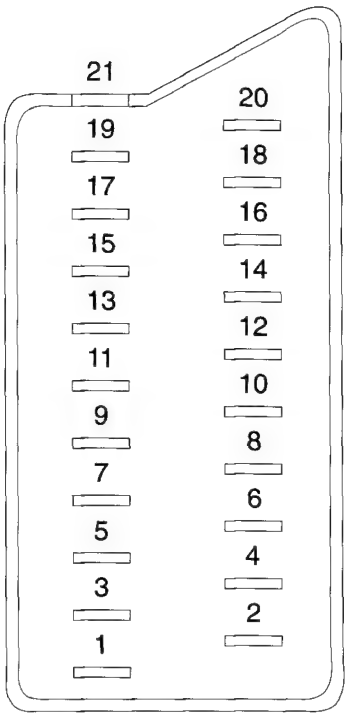
The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by **ASTA** to **BS 1362**, ie one that carries the ASTA mark.
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME.
IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED.
THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.
When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.
Open the fuse compartment with the screwdriver blade and replace the fuse.

21 pin connector (1, S 2/S 2)





Pin No		Signal	Signal level
1	○	Audio output B (right)	Standard level: 0.5Vrms Output impedance:less than 1kohm*
2	○	Audio input B (right)	Standard level:0.5Vrms Input impedance:More than 10kohms*
3	○	Audio output A (left)	Standard level:0.5Vrms Output impedance:less than 1kohm*
4	○	Ground (audio)	
5	○	Ground (blue)	
6	○	Audio input A (left)	Standard level:0.5Vrms Input impedance:More than 10kohms*
7	○	Blue input	0.7V±3dB, 75ohms, positive
8	○	Function select (AV control)	High state (9.5—12V):Part mode Low state (0—2V):TV mode Input impedance:More than 10kohms Input capacitance:Less than 2nF
9	○	Ground (green)	
10	○	Open	
11	○	Green	Green signal:0.7V±3dB. 75ohms, positive
12	○	Open	
13	○	Ground(red)	
14	●	Ground (blanking)	
15	○	Red input	0.7V±3dB, 75ohms, positive
	—	(S signal) croma input	0.3V±3dB, 75ohms, positive
16	○	Blanking input (Ys signal)	High state (1—3V) Low state (0—0.4V) Input impedance:75ohms
17	○	Ground (video output)	
18	○	Ground (video input)	
19	○	Video output	1V±3dB, 75ohms, positive Sync:0.3V(–3, +10dB)
20	○	Video input	1V±3dB, 75ohms, positive Sync:0.3V(–3, +10dB)
	—	Video Input/Y (S signal)	1V±3dB, 75ohms, positive Sync:0.3V(–3, +10dB)
21	○	Common ground (plug, shield)	

○ Connected ● Not Connected (open) * at 20Hz - 20kHz

Pin No	Signal	Signal level
1	Ground	
2	Ground	
3	Y (S signal) input	1V ± 3dB 75 ohm , positive Sync. 0.3V -3/+10 dB
4	C (S signal) input	0.3V ± 3dB 75 ohm , positive Sync.

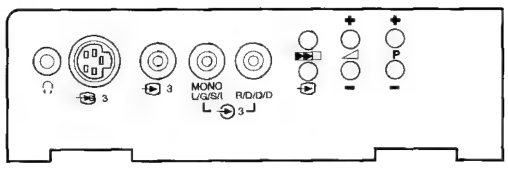


TABLE OF CONTENTS

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.

THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.

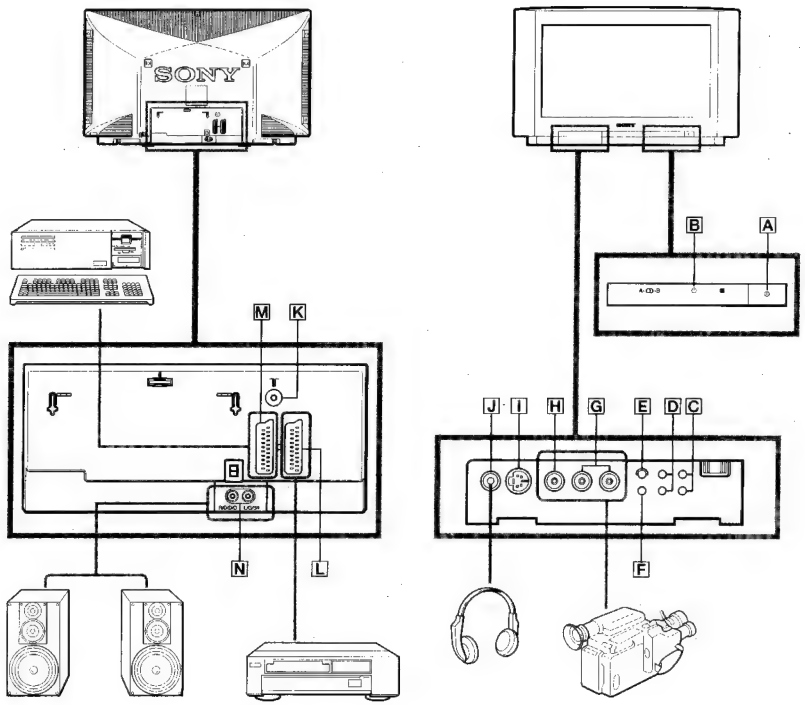
LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

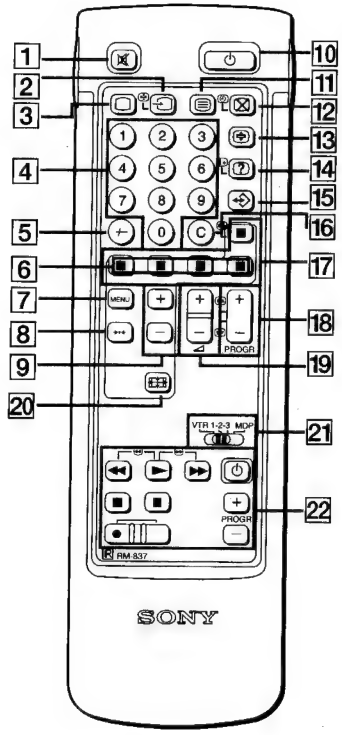
ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE PUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

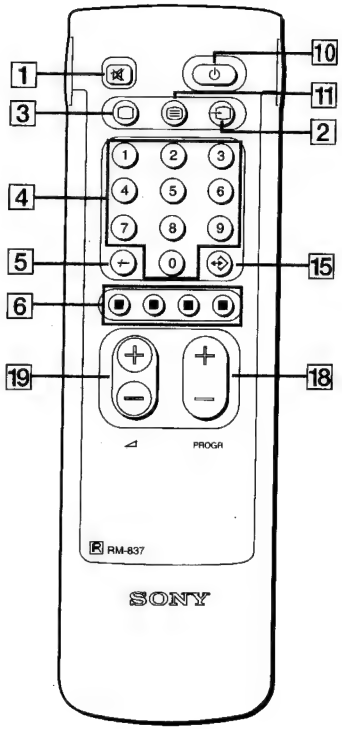
SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.





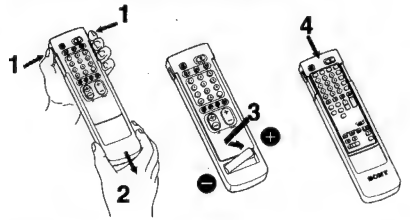
Full-Function Side



Simple Side

Getting Started

Inserting the Battery Into the Remote Commander



Remove the cover.

Check the correct polarity.

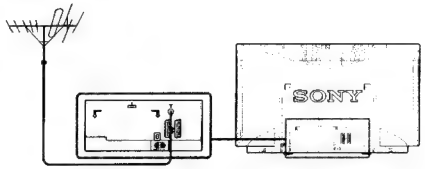
Refit the outside cover making sure that the Full Function side is visible.

About Battery Life

Under normal operation, a battery will last up to half a year.

Connecting the Aerial

Connect aerial to the socket at the rear of the TV. (cable not supplied)



Choosing a Language

(See inside of front cover and back cover)

1 Press ⏻ A on the TV.
The TV turns on. If the standby indicator B on the TV is lit, press ▢ 3 or any number button 4 on the Remote Commander.

2 Press MENU 7 on the Remote Commander.
The SELECT LANGUAGE screen appears.

MENU

3 Press one of the colour buttons 17 on the Remote Commander to select a language (Press the white button 17 to display other language alternatives).
The SELECT LANGUAGE screen clears and all subsequent menus appear in the chosen language.

SELECT LANGUAGE
- ENGLISH
- DEUTSCH
- FRANÇAIS
- ESPAÑOL
- MORE

SELECT COL. BUTTON

Note: From the second time you turn on the TV, the MENU screen appears instead of the SELECT LANGUAGE screen. Press the yellow button 17 then press the white button 17 to redisplay the SELECT LANGUAGE screen.

Tuning in to Channels

You can tune in up to 100 channels to programme positions either automatically or manually.

auto tuning: A single button press allows all receivable channels to be tuned. Use if you are unfamiliar with the channel numbers of stations.

manual tuning: Use if you are familiar with the channel numbers of stations.

Choose the more appropriate way for you.

Tuning in to Channels Automatically

There are two possibilities for auto tuning;

A. On the TV: hold down ▶▶| E on the front of the TV for 2 seconds
(All receivable channels are tuned in the order noted below).

or

B. On the Remote Commander: as follows

1 Press MENU 7.

2 Press the white button 17.

3 Hold down the red button 17 for 2 seconds,

Note: Press the green button 17 to cancel.

Channels are automatically stored as follows:	
Programme 1	BBC1
Programme 2	BBC2
Programme 3	ITV
Programme 4	CH4 or S4C

Note: Programme names are automatically taken from TELETEXT if available. If not, "- - - - -" is placed in the name.
- If you connect a VCR via the aerial cable, set the VCR to its test signal or play mode before auto-tuning.
- You may have to exchange the programme positions, if there are duplicated signals from local transmitters.

Tuning in to Channels Manually

1 Press MENU 7.
The MENU screen appears.

MENU

2 Press the white button 17 to select PRESET.
The PRESET screen appears.

PRESET
- AUTO TUNING
- MANUAL TUNING
- PROGR EXCHANGE
- EDIT PROGR NAME
- FINE TUNE

SELECT COL. BUTTON

3 Press the green button 17 to select MANUAL TUNING.
The MANUAL TUNING screen appears.

MANUAL TUNING

01 TV C21 - - - - -
- SKIP OFF
- OK

ENTER PROGR. NO.
USE NO. BUTTONS OR
CHANGE BY MENU +/-

4 Press the number buttons 4 or MENU+/– 9 to select a programme position.
If you use the number buttons 4, enter a double-digit number. (e.g. for programme number 4, first press 0, then 4)

5 Press the green button 17.

Note: Use MENU +/– 9 to select "TV". You can alternatively select input sources which may be assigned to programme positions. The display changes as follows:

TV ⟷ AV1 ⟷ RGB ⟷ AV2 ⟷ YC2 ⟷ AV3 ⟷ YC3

MANUAL TUNING

01 TV C21 - - - - -
- OK

SELECT SYSTEM/INPUT
CHANGE BY MENU +/-

6 Press the green button 17.

Note: If a video input source is selected in step 5, this is now stored. Refer to step 4 to tune other programme positions.

MANUAL TUNING

01 TV C21 - - - - -
- OK

ENTER CHANNEL NO.
USE NO. BUTTONS OR
SEARCH BY MENU +/-

7 Press the number buttons 4 or MENU+/– 9 to select the channel number.
If you use the number buttons 4, enter a double-digit number. (e.g. for channel 23, first press 2, then 3)

Note: Programme names are automatically taken from TELETEXT if available. If not, "- - - -" is placed in the name. Or if you select AV1, RGB, AV2, YC2, AV3 or YC3 as an input source, AV1, RGB, ... is placed.

8 Press the green button 17 to store.

Note: If you want to preset other channels, repeat steps 4 to 8.

9 Press MENU 7 twice to return to the normal screen.

Note: You can skip unused programme positions when selecting programmes with the PROGR +/– buttons 18. Press the red button 17 to skip in step 4. However, the skipped programmes may still be called up when you use the number buttons.

Basic TV Operations

Turning the TV on and off

Turning on
Depress ⏻ A on the TV.

Turning off temporarily
Press ⏻ 10 on the Remote Commander.
The TV enters standby mode and the standby indicator B on the front of the TV lights up.

Turning on again
Press ▢ 3, PROGR+/– 18, or one of the number buttons 4 on the Remote Commander.

Turning off completely
Depress ⏻ A on the TV.
Note: It is recommended to use ⏻ A to turn off the TV. This could help you save energy.

Selecting TV Programmes

Press PROGR+/– 18 or press number buttons 4.

To select a double-digit number
Press -/-- 5, then the number buttons 4.

Adjusting the Volume

Press ◢+/– 19.

Muting the Sound

Press 🔇 1.
To resume normal sound, press 🔇 1 again.

Displaying the On-screen Indications

Press ⓘ 14 once to display the on-screen indications. Press again to make the indications disappear.

Note: If NICAM is transmitted regardless of whether it is stereo or mono, the two speakers symbol automatically appears on the screen for several seconds.

Operating the TV Using the Buttons on the TV

With the buttons on the TV, you can adjust or select the functions as follows:

Press ◢+/– D to adjust the volume.

Press P+/– C to select programme numbers or to turn the TV on from the standby mode.

Press ⏎ F to select the input source.

Press ▶▶| E to preset channels automatically.

Advanced TV Operations

Operating the Menu System

You can adjust picture and sound, preset channels to programme positions and utilise other convenient features by using the following menu system.

Adjusting the Picture and Sound

Although picture and sound are adjusted at the factory you can adjust them to suit your own taste.

1 **Press MENU 7.**
The MENU screen appears.

2 **Press the red button 17 to select PICTURE or the green button 17 to select SOUND.**

3 **Press the respective colour button 17 to select an item.**

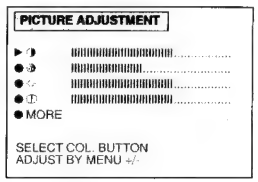
4 **Press MENU +/– 9 to adjust.**

5 **Press MENU 7 twice or wait until the menu displays disappear automatically to return to the normal screen.**

Note: When selecting menus, the picture becomes darker. If, however, an item in the PICTURE ADJUSTMENT menu is selected, normal level of TV picture is restored to allow the best adjustment.

PICTURE ADJUSTMENT

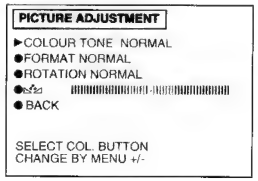
(First Page)



Press colour button	Effect
Red: For Picture ◑	Less —+— More
Green: For Colour ◕	Less —+— More
Yellow: For Brightness ☼	Darker —+— Brighter
Blue: For Sharpness ◫	Softer —+— Sharper
White:	Next page of PICTURE ADJUSTMENT

PICTURE ADJUSTMENT

(Second Page)

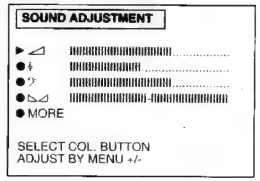


Press colour button	Effect
Red: For Colour Tone	Normal -> Warm (reddish colour tone) -> Cool (blueish colour tone)
Green: For Format	Using 20 select mode:
	4:3 for normal ratio 4:3
	Smart for imitation of wide screen effect (16:9) for 4:3 broadcasts
	Wide for 16:9 broadcasts
	Zoom for imitation of wide screen effect (16:9) for movies broadcast in cinemascopic format
	Zoom ⇧ (for scroll-up of screen to show sub-title)
	Whilst in zoom mode, press MENU +/–9 to select Zoom ⇧. Press MENU +/–9 again to return to zoom mode
Yellow: For Picture Rotation	Normal: Normal setting –5 ~ +5: Adjusts the picture slant caused by the earth magnetism
Blue: For Hue control (only for NTSC video signals)	Reddish —+— Greenish
White:	Back to first page of PICTURE ADJUSTMENT

Note: Press ⏮ 8 on the Remote Commander to reset to the factory preset levels for picture and sound.

SOUND ADJUSTMENT

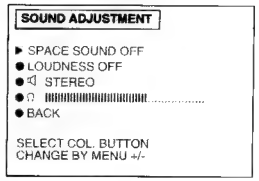
(First Page)



Press colour button	Effect
Red: for Volume ◿	Less —+— More
Green: for Treble 𝄞	Less —+— More
Yellow: for Bass 𝄢	Less —+— More
Blue: for Balance ◺◿	More left - more right
White:	Next page of SOUND ADJUSTMENT

SOUND ADJUSTMENT

(Second Page)



Press colour button	Effect
Red: for Space Sound	OFF: normal sound ON: for a special acoustic sound effect
Green: for Loudness	OFF: normal sounds ON: when listening to music broadcast
Yellow: for Stereo:	Stereo -> Mono A (left channel) - > Mono B (right channel) -> Mono
Blue: for ∩ Headphone volume:	Less —+— More
White:	Back to first page of SOUND ADJUSTMENT

Note: Press ⏮ 8 on the Remote Commander to reset to the factory preset levels for picture and sound.

Using Special Features

With your TV you can utilise special features such as Parental Lock or Sleep Timer.

1 **Press MENU 7.**
The MENU screen appears.

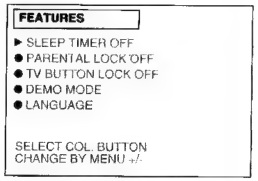
2 **Press the yellow button 17 to select FEATURES.**

3 **Press the respective colour button 17 to select an item.**

4 **Press MENU +/– 9 to change.**

5 **Press MENU 7 twice or wait until the menu displays disappear automatically to return to the normal screen.**

FEATURES



Press colour button	Effect
Red: for Sleep Timer (Automatic switch off function)	OFF -> 0:30 -> 1:00 -> 1:30 -> 2:00 (hours) After the selected time the TV set switches itself automatically into standby mode.
Green: for Parental Lock (For preventing children from watching programmes which you consider unsuitable)	OFF: Normal setting ON: The TV-channel you are watching is now blocked. In this way you can prevent undesirable broadcasts from appearing on the screen.
Yellow for TV Button Lock	OFF: Normal setting ON: The buttons on the TV do not function anymore. (The Remote Commander still operates)
Blue: for Demo Mode	ON: A sequence of menu pictures is displayed. Press any button on the Remote Commander to stop the function.
White: for Language	The SELECT LANGUAGE screen appears.

Advanced Presetting Functions

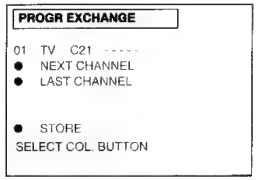
Exchanging Programme Positions

You can exchange the programme positions to a preferred order (example: exchange programme 09 (channel C21) with programme 15 (channel C24)).

1 **Press MENU 7.**
The MENU screen appears.

2 **Press the white button 17.**
The PRESET screen appears.

3 **Press the yellow button 17.**
The PROGR EXCHANGE screen appears.



4 **Press the white button 17 repeatedly until the desired programme number (09) appears.**

5 **Press the red or the green button 17 repeatedly until the desired channel number (C24) appears.**

6 **Press the white button 17 to store.**
Now the exchange has been completed. Channel C24 is tuned in to programme 09 and channel C21 is tuned in to programme 15.

7 **Press MENU 7 twice to return to the normal screen.**

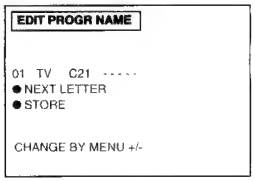
Editing Programme Names

You can edit the programme names up to five letters.

1 **Press MENU 7.**
The MENU screen appears.

2 **Press the white button 17.**
The PRESET screen appears.

3 **Press the blue button 17.**
The EDIT PROGR NAME screen appears.
The first character flashes.



4 **Press MENU+/– 9 to edit the first letter.**
The first letter changes as follows;

A ↔ B ↔ . . . ↔ Z ↔ 0 ↔ 1 ↔ . . . ↔ 9 ↔ "–" (space)

5 **Press the red button 17 to move to the next letter.**

6 **Repeat steps 4 to 5, until the fifth letter is chosen.**

7 **Press the green button 17.**
The programme name is stored, and the normal screen appears. To edit another programme name, repeat steps 1 to 7.

Fine Tuning

You can adjust the receiving condition by the FINE TUNE function.

1 **Press MENU 7.**
The MENU screen appears.

2 **Press the white button 17.**
The PRESET screen appears.

3 **Press the white button 17 again.**
The FINE TUNE screen appears.

4 **Press MENU+/– 9 to adjust the receiving condition.**

5 **Press the red button 17 to store the adjustment, or press the green button 17 not to store.**
Then the normal screen appears. If you have pressed the green button, the fine tuned condition is cancelled once you choose another programme.

Tuning in to a Channel Temporarily

You can tune in to a channel temporarily, even when it has not been preset.

1 **Press C 16 on the Remote Commander.**
The indication "C" appears on the screen.

2 **Enter a double-digit channel number using the number buttons (e.g. for channel 23, first press 2, then 3).**
The channel appears.
However, the channel is not stored.

Teletext Operation

TV stations broadcast teletext programmes via the TV channels. For basic operation of teletext, use the simple side of the Remote Commander. For the advanced features of teletext, use the buttons indicated in green on the full function side of the Remote Commander.

Basic Teletext Operation

Switching Teletext on and off

1 **Select the channel which carries the teletext service you wish to view.**

2 **Press ▤ 11 to display Teletext.**
If no teletext signal is broadcast, the indication P100 is displayed on a black screen.

3 **Input three digits for the page number using the number buttons 4.**
The numbers are displayed on the screen and the requested page appears in a few seconds.
Note: If you make a mistake, type in any three digits, then re-enter the correct page number.

4 **Press ▢ 3 once or ▤ 11 twice to return to the TV mode.**

Note: To change the teletext channels. First press ▢ 3 to return to the TV mode, then repeat steps 1 to 3.
Note: If the signal of a TV channel is weak, teletext errors may occur.

Advanced Teletext Operation

Using Fastext

With Fastext you can access pages with one button press. When a Fastext page is broadcast, a colour-coded menu will appear at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue buttons 6 on the Remote Commander.
Press the corresponding colour button 6 on the Remote Commander which corresponds to the colour-coded menu. The page will be displayed in a few seconds.

Requesting the Index page

Press ▤ 17. The Index page appears.

Accessing the next or preceding page

Press ▤ (PAGE +) or ▤ (PAGE –) 18. The next or the preceding page appears on the screen.

Superimposing the teletext display on the TV picture

Press ▤ 11 once if you are in text mode or press ▤ 11 twice if in TV mode.
To return to the normal teletext display press ▤ 11 twice.

Preventing a teletext page from being updated or changed

Press ⊕ (HOLD) 2. The HOLD symbol (⊕) appears on the screen and the selected subpage is held until you press ▤ 11 to cancel.

Enlarging the teletext display

Press ⊕ 13 once to enlarge the upper half. Press twice to enlarge the lower half. Press again to restore the normal display.

Revealing concealed information (e.g. answers to a quiz)

Press ? (REVEAL) 14. The information is revealed. Press ? 14 again to conceal the information.

Watching TV while waiting for a requested page to be displayed

1 **Request a new teletext page.**

2 **Press ⊠(TEXT CL) 12.**
The TV programme is displayed and the symbol ▤ is displayed at the top of the page.
Note: When the requested page is available the page number is displayed at the top of the screen.

3 **Press ▤ 11 to view the page.**

Note: To cancel the request
Display the teletext page, then press ▤ 11. The request is now cancelled. Press ▢ 3 to resume TV mode.

Using the Favourite Page system

You can store up to four of your favourite teletext pages per programme with the help of the Favourite page system. In this way you have quick access to the pages you watch frequently.

Storing the Favourite Pages

1 **Select the page you would like to store using the number buttons 4.**

2 **Press ⇢ 15 twice.**
The colour prompts at the bottom of the screen flash.

3 **Press any of the colour buttons 6 on the Remote Commander to store the selected page.**
The page is now stored on this button.

Repeat steps 1 to 3 for the other 3 pages available.

Displaying the Favourite pages

1 **Press ⇢ 15.**

2 **Press the colour button 6 corresponding to the colour prompt onto which the desired page is stored.**
The page is requested. (It may take a few seconds to be received).

Note: Step 1 must be taken before every favourite page selection, otherwise the normal Fastext facility operates.

Using the Time Function in the TV mode

Press ◷ 12 to request the time. Press again to cancel the request.
Note: This function is available only when teletext is broadcast.

Connecting Other Equipment

You can connect optional audio/video equipment to this TV such as VCRs, video disc players, cameras, external speakers or stereo systems.

Connector	Acceptable input signal	Available output signal
1 M (AV1/RGB)	Audio/video and RGB signal	Audio/video signal from TV Tuner
2/2 L (AV2) (YC2)	Audio/video and S video signal	Audio/video signal from selected source
3/3 G H (AV3)	Audio/video signal and	No outputs
3/3 G I (YC3)	Audio/S video signal	
R/D/D/D – L/G/S/I N	No inputs	Audio signal (variable)

To watch a video input picture, press 2 until the desired video input appears.
To return to the normal TV picture, press 2 repeatedly or press 3.

Note: If you have a decoder, connect it to 1 M.

Connecting a VCR Using the TV Aerial Terminal

Connect the aerial output of the VCR to the aerial terminal K of the TV. It is recommended to tune in the VCR signal to programme number "0". For details, see "Tuning in to Channels Manually" on page 6.

Note: S video input (Y/C input) I L
Video signals may be separated into Y (luminance or brightness) and C (chrominance) signals.
Separating the Y and C signals prevents them from interfering with each other and therefore improves the picture quality (especially luminance). This TV is equipped with 2 video input terminals through which these signals can be input directly.

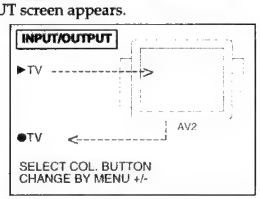
Checking and Selecting the Input and Output Sources Using the Menu

You can display a menu screen to see which input and output source are selected. You can also change the selection using this menu.

Checking the Input and Output Sources

1 **Press MENU 7.**
The MENU screen appears

2 **Press the blue button 17 to select INPUT/OUTPUT.**
The INPUT/OUTPUT screen appears.



Selecting an Input Signal

Press the red button 17 to select INPUT. Press MENU +/– 9 to select the desired input source.
You can select among the following sources:

TV ↔ AV1 ↔ RGB ↔ AV2 ↔ YC2 ↔ AV3 ↔ YC3

Selecting an Output Signal

The 2 / 2 connector L outputs the source input from the other connectors. Press the green button 17 to select OUTPUT. Press MENU +/– 9 to select the desired output source.

You can select among the following sources:

TV ↔ AV1 ↔ AV2 ↔ YC2 ↔ AV3 ↔ YC3

Note: Press MENU 7 twice or wait until the menu displays disappear automatically to return to the normal screen.

Remote Control of Other Sony Equipment

You can use the TV Remote Commander to control most Sony remote-controlled video equipment such as: Beta, 8mm or VHS VCRs or video disc players.

Tuning the Remote Commander to the equipment

1 **Set the VTR 1/2/3 MDP selector 21 according to the equipment you want to control:**
VTR 1: Beta or VCR
VTR 2: 8mm VCR
VTR 3: VHS VCR
MDP: Video Disc Player

2 **Use the buttons 22 to operate the additional equipment.**

Note: If your video equipment is furnished with a COMMAND MODE selector: set this selector to the same position as the VTR 1/2/3 MDP selector on the TV Remote Commander.
Note: If the equipment does not have a certain function, the corresponding button on the Remote Commander will not operate.
Note: When you use the ● (record) button, make sure to press this button and the one to the right of it simultaneously.

Using Headphones

You can utilise headphones. Connect them to the headphone jack J to mute the sound from the speakers.
Note: You cannot control the sound adjustment except for volume.

For your information

Troubleshooting

Here are some simple solutions to problems which may affect the picture and sound.

No picture (screen is dark), no sound
- Plug the TV in.
- Press ⏻ A on the TV. (If the standby indicator B is lit, press 3 or any number button 4 on the Remote Commander.)
- Check if the selected video source is on.
- Turn the TV off for three or four seconds and then turn it on again using ⏻ A.

Poor or no picture (screen is dark), but good sound
- Press MENU 7 to enter the MENU screen, and press the red button 17, then adjust ◑ and ☼.

Good picture but no sound
- Press + 19.
- If is displayed on the screen, press 1.

No colour for colour programmes
- Press MENU 7 to enter the MENU screen, and press the red button 17, then adjust ◑.

Remote Commander does not function
- Replace the battery.

If you continue to have problems, have your TV serviced by qualified personnel. Never open the casing yourself.

Specifications

Television system I

Colour system PAL
NTSC 3.58 (video input only)
NTSC 4.43 (video input only)

Channel coverage UHF 21-69

Picture tube Super Trinitron Wide
Approx. 71cm (28 inches)
(Approx. 67cm picture measured diagonally)
110° deflection

Terminals
Rear
1 21-pin Euro connector (CENELEC standard)
- inputs for audio and video
- inputs for RGB
- outputs of TV video and audio

2/2 21-pin Euro connector
- inputs for audio and video
- inputs for S video
- outputs for audio and video (selectable)

Audio outputs (variable) – phono jacks

Front
3 Video input-phono jack
3 Audio input-phono jacks
3 S video input-4-pin DIN
Headphone jack: stereo mini jack

Sound output 2x12W RMS
2x30W music power

Power consumption 169W

Dimension (WxHxD) Approx. 798x497x531mm

Weight Approx 44kg

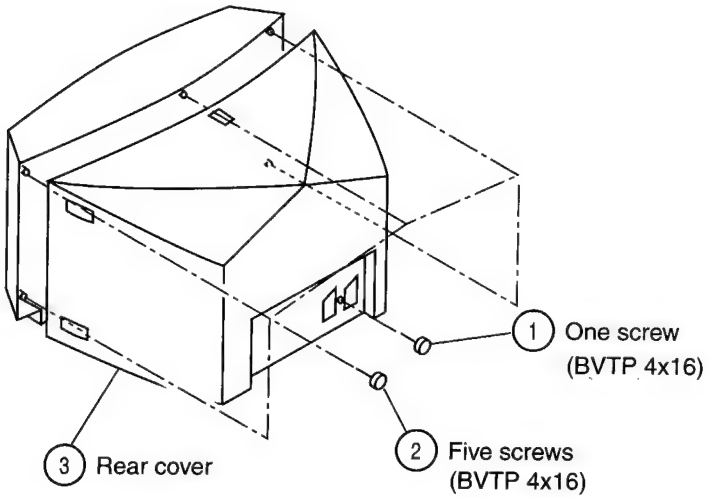
Supplied accessories Remote Commander RM-837, Battery R6

Other features Fastext/NICAM

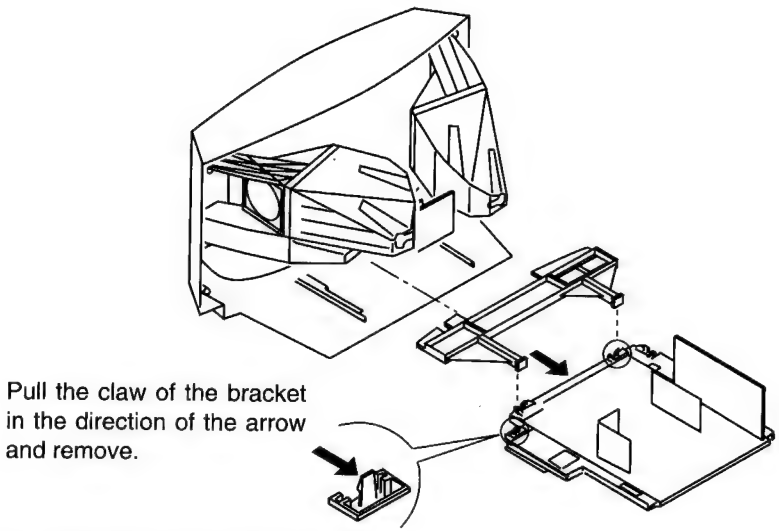
Design and specifications are subject to change without notice.

SECTION 2
DISASSEMBLY

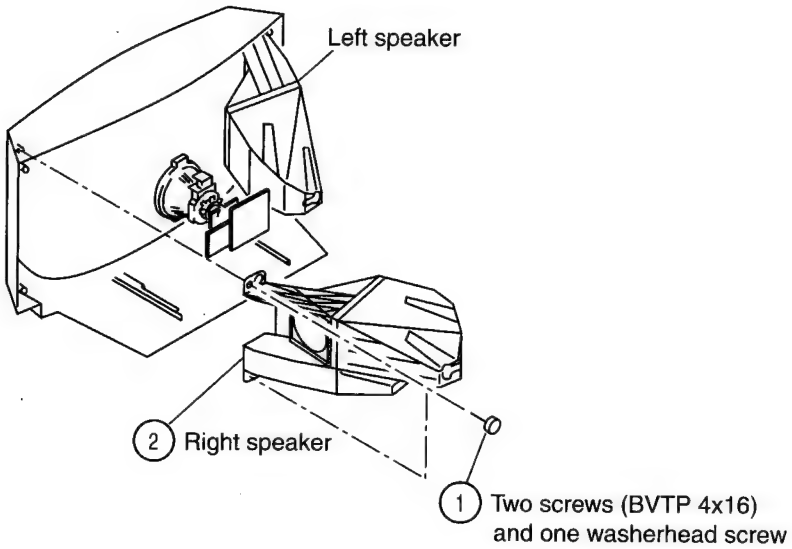
2-1. REAR COVER REMOVAL



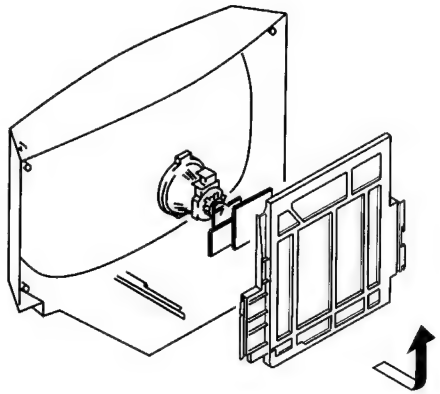
2-2. CHASSIS ASSY AND H BRACKET REMOVAL



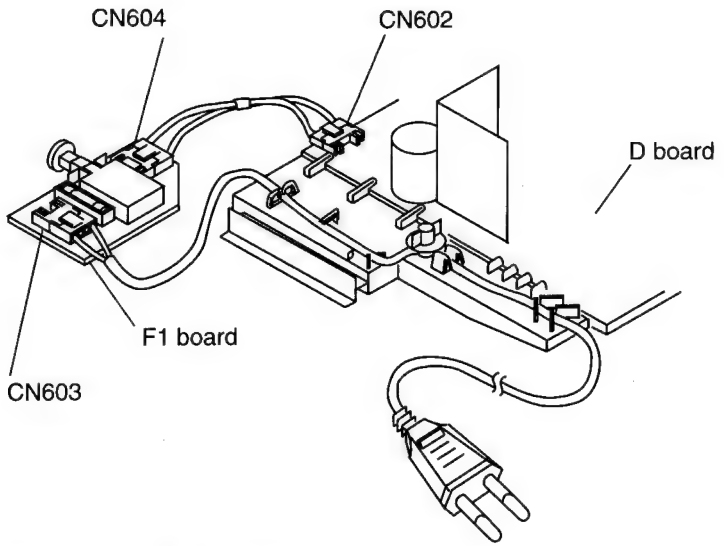
2-3. SPEAKER REMOVAL



2-4. SERVICE POSITION



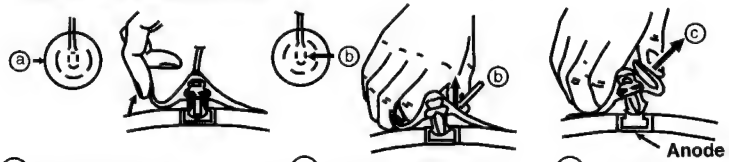
2-5. WIRE DRESSING



• REMOVAL OF ANODE-CAP

Note : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

• REMOVING PROCEDURES.



(1) Turn up one side of the rubber cap in the direction indicated by the arrow (a)

(2) Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)

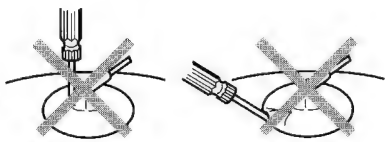
(3) When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c)

• HOW TO HANDLE AN ANODE-CAP

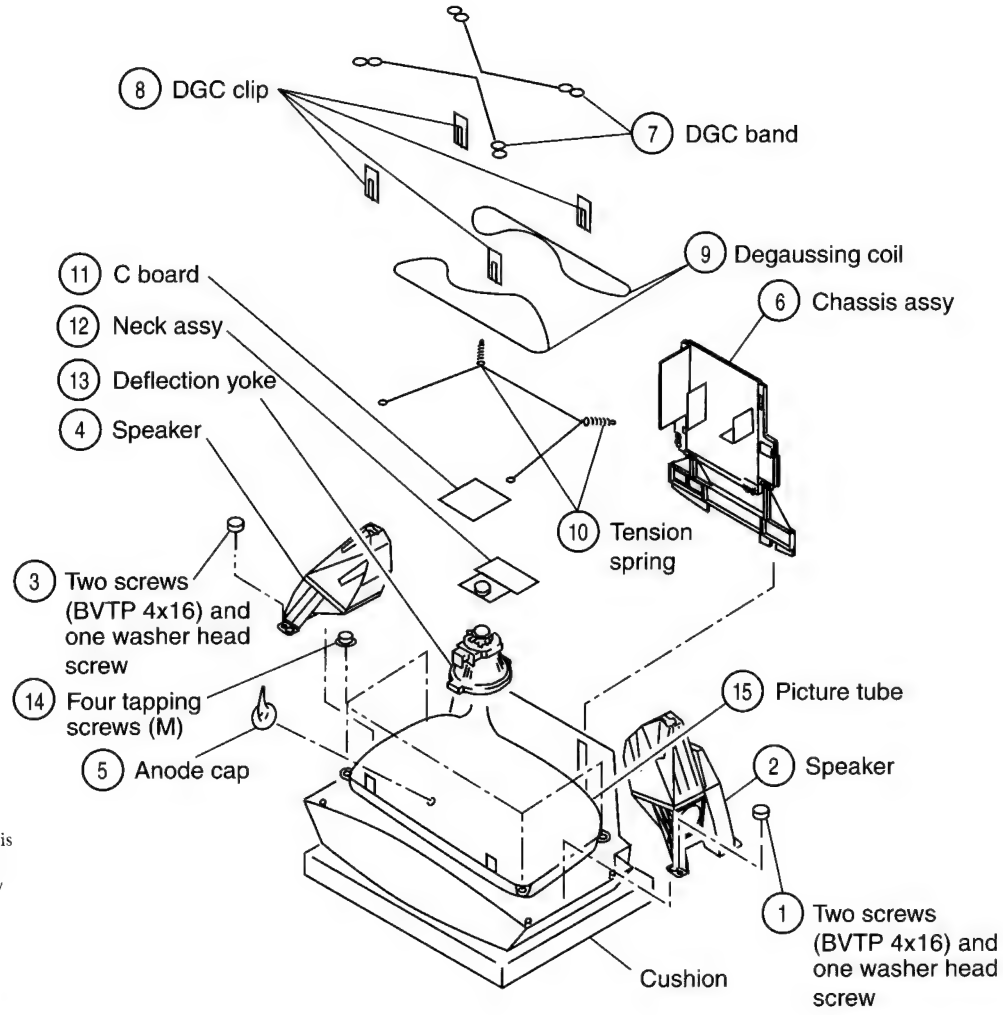
(1) Don't damage the surface of anode-cap with sharp shaped material !

(2) Don't press the rubber hardly not to hurt inside of anode-caps !
A metal fitting called as shatter-hook terminal is built into the rubber.

(3) Don't turn the foot of rubber over hardly !
The shatter-hook terminal will stick out or damage the rubber.



2-6. PICTURE TUBE REMOVAL



SECTION 3
SET - UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to these settings :

◑ Contrast ..... 80% (or remote control normal)
☼ Brightness 50%

- Carry out the following adjustments in this order :

1. Beam landing
2. Convergence
3. Focus
4. Screen (G2), White balance

Note: Testing equipment required.
1. Colour bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

Preparation:
- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

1. Input the white signal with the pattern generator.
   CONTRAST, BRIGHTNESS } normal
2. Position neck assy as shown in Fig.3-2.
3. Set the pattern generator raster signal to red.
4. Move the deflection yoke forward and adjust with the purity control so that the red is at the centre and the blue and the green take up equally sized areas on each side. (See Fig. 3-1 - 3-3)
5. Move the deflection yoke forward and adjust so that the entire screen becomes red. (See Fig. 3-1)
6. Switch the raster signal to blue, then to green and verify the condition.
7. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
8. If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig. 3-4)

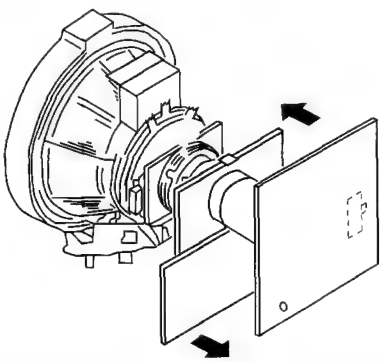


Fig. 3-1

Fig. 3-2

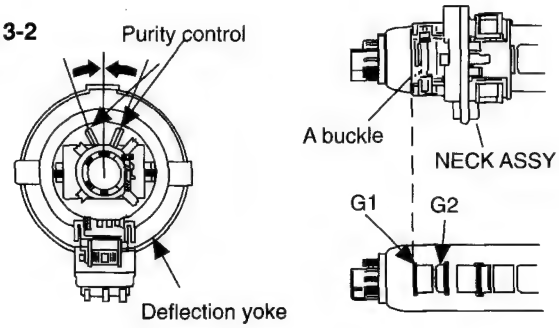
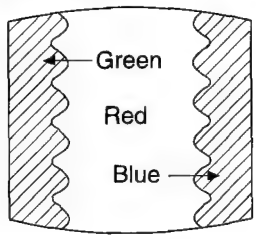


Fig. 3-3



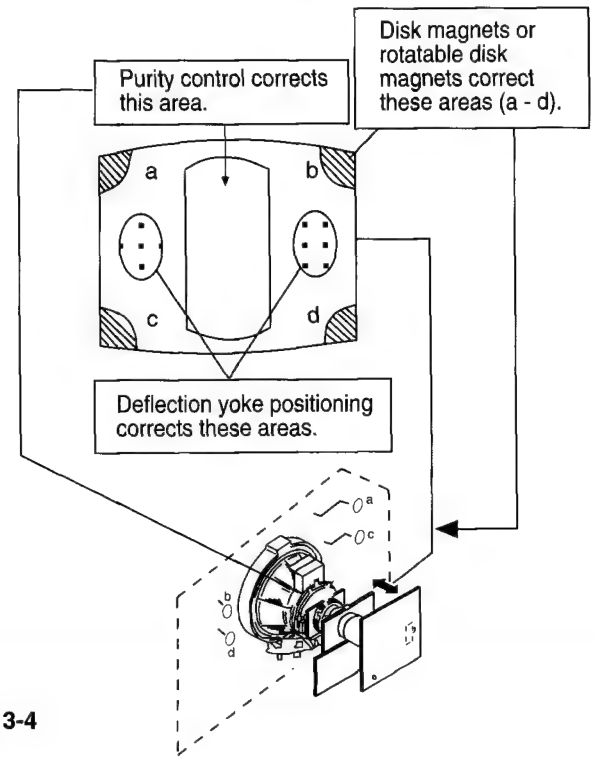


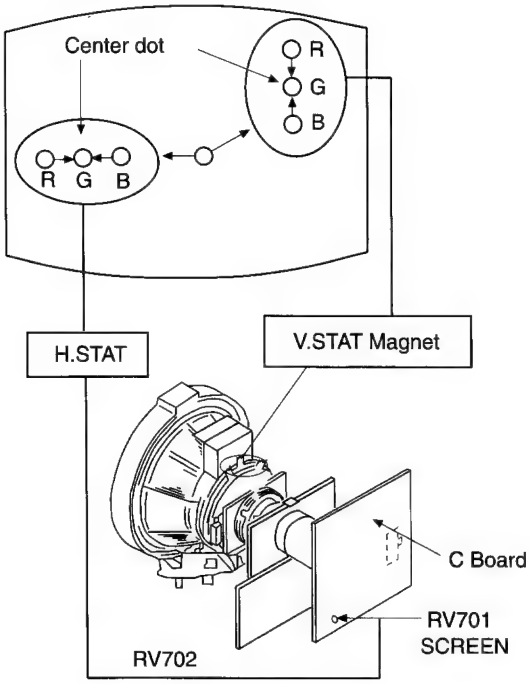
Fig. 3-4

3-2. CONVERGENCE

Preparation:

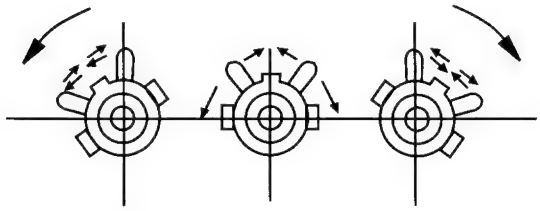
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide a dot pattern.

(1) Horizontal and vertical static convergence

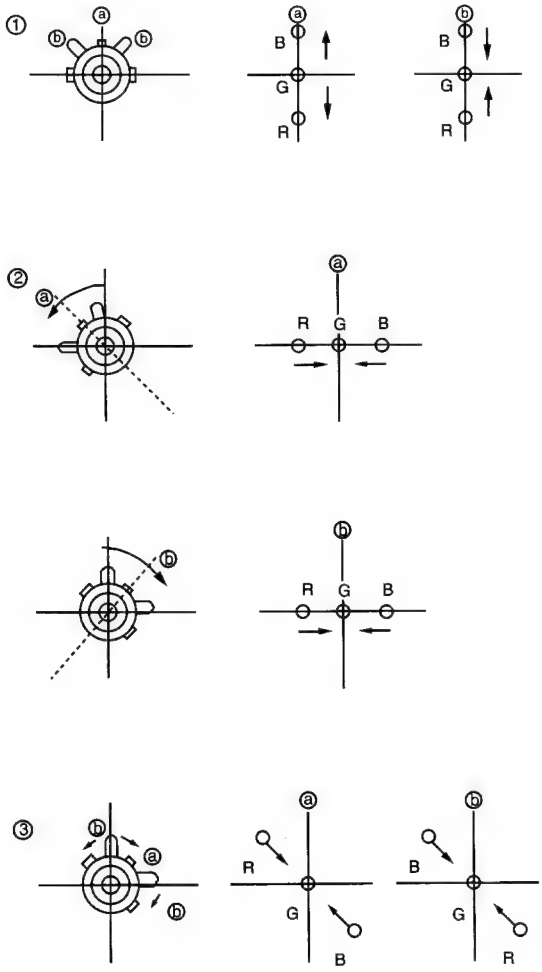


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the centre of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the centre of the screen.
3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the centre of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner given below.
   (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

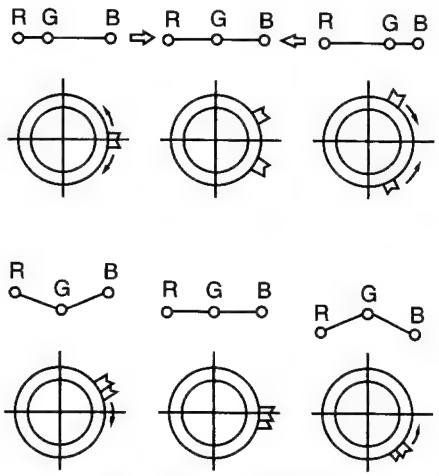
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.

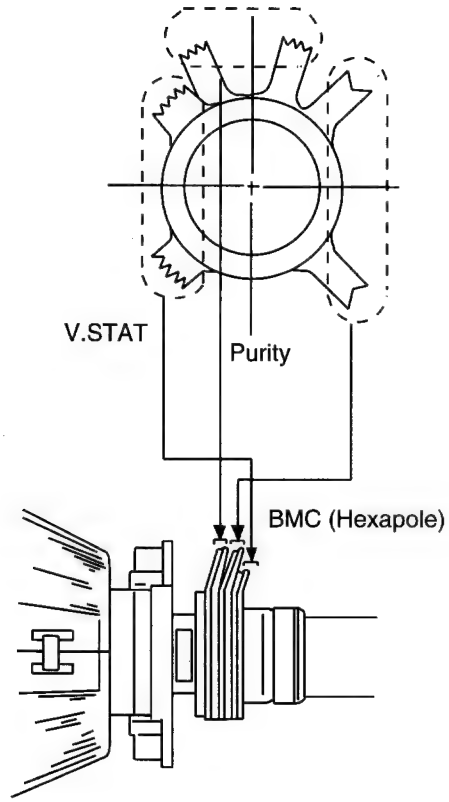


4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet





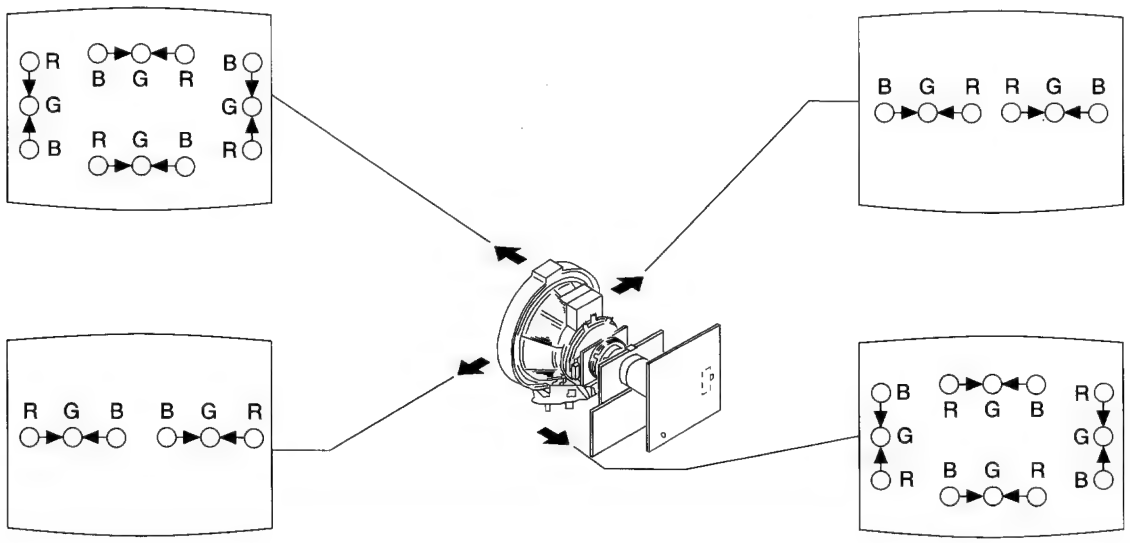
- The respective dot position resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
  Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the centre of the screen (by moving the dots in the horizontal direction).

(2) Dynamic convergence adjustment.

Preparation:

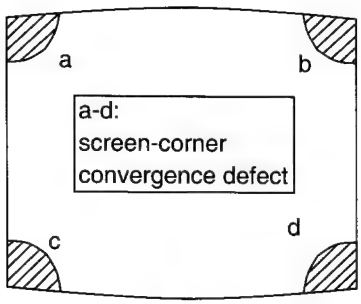
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.

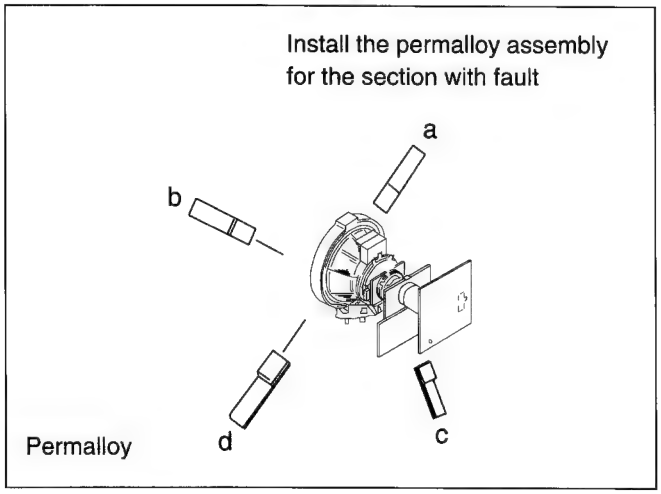
1. Slightly loosen the deflection yoke screws.
2. Remove the deflection yoke spacer.
3. Move the deflection yoke as shown in the figure below and optimize the convergence.
4. Tighten the deflection yoke screws.
5. Re-install the deflection yoke spacer.



(3) Screen corner convergence.

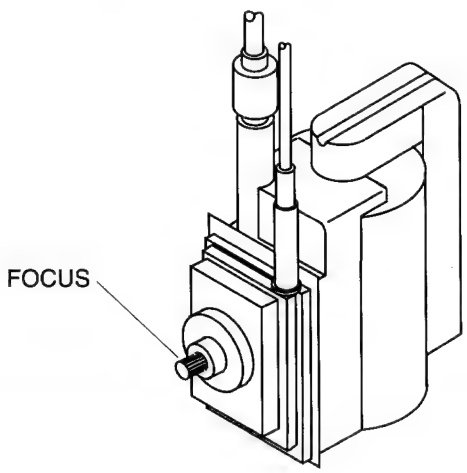
If you are unable to adjust the corner convergence properly, correct them with the use of permalloy assemblies.





3-3. FOCUS

Adjust the focus to optimize the screen.



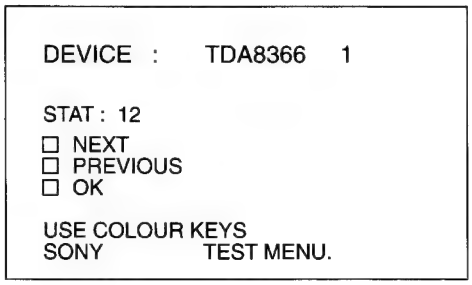
3-4. SCREEN (G2), WHITE BALANCE

Screen G2 Setting

1. Input the dot signal from the pattern generator.
2. Set the picture brightness control to its lowest level.
3. Apply 180V DC to the R,G, and B cathodes with an external power supply.
4. While watching the picture, adjust G2 control RV701 (Screen) to the point just before the return lines disappear.

White balance adjustment

1. Receive an all-white signal.
2. Enter into service mode. (Refer to the section 4 "Electrical Adjustment" on how to enter service mode.)
3. Select TDA8366 1 on menu.



4. Press the White button on the Remote Commander to enter into the device Menu.
5. Press the Red button 10 times "Next" "Next" "Next" to select HWB RED, adjust to 32.
6. Press the Red button to select HWB GREEN, adjust with the + and - menu buttons so that the white balance becomes optimum.
7. Press the Red button to select HWB BLUE, adjust with the + and - menu buttons so that the white balance becomes optimum.
8. Press the TV button twice on the Remote Commander to store the data and return to TV operation.

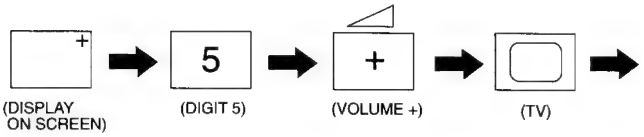
SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander RM-837.

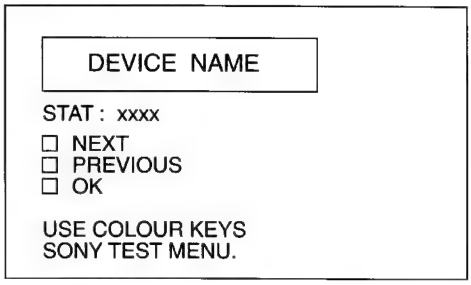
HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power switch of the set and enter into standby mode.
2. Press the following sequence of buttons on the Remote Commander.

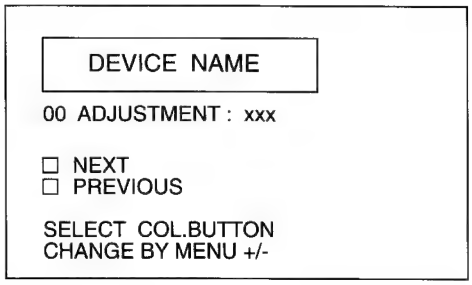


"TT " will appear in the top right corner of the screen. Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.



4. Press the Red (Next) and Green (Previous) buttons to select the device corresponding to the adjustment item from the table. Then press the White button (OK).



5. Press the Red (Next) or Green (previous) buttons to select the adjustment item. Then press the ▽ and △ buttons to change the data to comply with each standard.

6. Turn off the power to quit the service mode when adjustments are completed.

Initial Conditions for setup of TDA8366, TDA6612, TDA6622 and SAA7283.

TDA8366 1	INIT VALUE	TDA8366 2	INIT VALUE
Hue	31	Interlace	00
H Shift	Adj	Sync Mode	00
H Size	Adj	Col Dec	00
Pin Amp	Adj	Vert Div	00
Corn Pin	Adj	Vid ID	00
Tilt	Adj	EHT Track	01
V.Linear	Adj	En V Grd	00
V.Size	Adj	Serv Blk	00
S.Corr	Adj	OVP Mode	00
V.Cent	Adj	Aspect R	00
HWB Red	Adj	Start Freq	00
HWB Green	Adj	Y/C Input	00
HWB Blue	Adj	PAL/NTSC	00
Peaking	8	Xtal PLL	00
Bright	32	Y Delay	07
Colour	32	RGB Blk	00
Picture	37	Noise Cor	00
AGC Set	00	Fast Blk	01
Srce Sel 1	00	AFC Wind	00
Srce Sel 2	00	IF Sensty	00
Time Con	03	Mod Std	00
Xtal Ind	03	Vid Mute	01
FF Freq	02		

TDA6612 (TDA6622 UK models)	INIT VALUE	TDA6612 (TDA6622 UK models)	INIT VALUE
MPX Per	00	Mute 2	01
Quasi St	00	C1/2LS	00
Bass Exp	00	C1/2KH	00
H Pulse	00	Mono	01
Matrix St	00	Scart	00
Bypass	00	Scart D	00
Vol L Sp	07	AM	00
Vol R Sp	07	SAA7283	INIT VALUE
Vol HP	00	Mon M1/M2	01
Pll Sync	00	DM Select	01
Mute 3	01	SSWIT 123	07
Treble	08	Port 2	00
Bass	09	Mute Def	00
X Talk Adj	Adj	AMDIS	00
Mute 1	00	E Max	80
		E Min	01

4-2. TEST MODE 2 :

Is available by pressing Test button twice, OSD 'TT ' appears. The functions described below are available by pressing the two numbers. To release the Test Mode 2, press 0 twice, or switch the TV into Stand-by Mode.

00	switch Test Mode 2 off
01	picture maximum
02	picture minimum
03	Volume 35%
04	Volume 50%
05	Volume 65%
06	Volume 80%
07	Ageing Condition (Volume min., Picture max., Brightness max.
08	Shipping Condition (Analog Values are RESET due to factory setting, Prog 1 is selected, TT Mode is switched off)
09	"Menu" Flag request
10	Tenth entry is deleted
11	dummy
12	dummy
13	dummy
14	Forced AV 16:9 detection on/off
15	Read factory setting from NVM Reads Volume, Balance, Treble, Bass, Brightness, Contrast, Hue, Sharpness, Colour values from ROM to the actual used values (Last Power Memory)
16	Save actual used values as RESET values Memorize actual used values Balance, Treble, Bass, Hue, Sharpness at RESET position in NVM.
17	Preset Label for AV Sources
18	RGB Priority on/off
19	Clear all preset labels
20	Tenth entry is deleted
21	Sub Contrast
22	Sub Colour
23	Sub Brightness
24	Set destination = U RGB Priority = Off
25	Set destination = D RGB Priority = Off
26	Set destination = B RGB Priority = On
27	Set destination = K RGB Priority = Off
28	Set destination = L RGB Priority = Off
29	Set destination = E RGB Priority = Off

30	Tenth entry is deleted.
31	Set destination = A RGB Priority = on.
32	Switch between destination DN normal mode and destination DT Turkish mode.
33	Auto AGC.
34	N/S pin adjust.
35	Manual AGC adjust.
36	dummy
37	dummy
38	28" version on/off.
39	dummy
40	Tenth entry is deleted.
41	Re-initialise NVM.
42	Production use only.
43	Initialise Geometry settings.
44	Initialise all favorite pages to be 100.
45	Channel locks off.
46	IR channel presetting mode. The channel presetting can be done by a special IR transmitter.
47	Store geometry settings for 4:3 and smart.
48	Set NVM testbyte to 44h.
49	Erase the NVM Testbyte (this byte detects already stored NVM's). After selecting this function, switch TV off and on, the NVM will be preset by the micro controller.

In Test Mode the Menu display is switchable by the Speaker-Off button.

Note : For Test Modes 41 - 49 it is necessary to ensure that the TV is set to Prog 59.

SUB BRIGHTNESS ADJUSTMENT

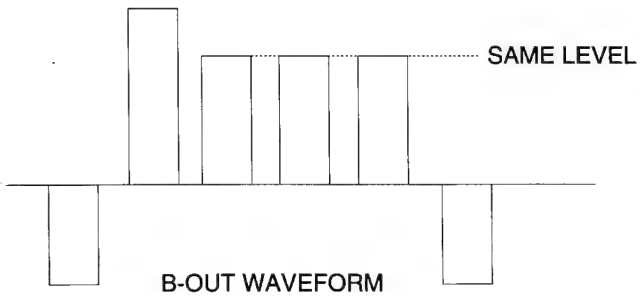
1. Input a Phillips pattern.
2. Enter into service mode and press 23.
3. Adjust data so that 0-IRE of grey scale and CUT-OFF 20-IRE are only slightly visible on screen.

SUB CONTRAST ADJUSTMENT

1. Input a video that contains a small 100% area on a Black Background.
2. Enter into service mode and press 01 to have PIC max followed by 21.
3. Connect oscilloscope to pin (1) of CN703 (R OUT) and adjust HWB Red data of TDA8366 1 to obtain 2.3Vp-p.

SUB COLOUR ADJUSTMENT

1. Input a PAL colour bar signal.
2. Connect an oscilloscope to pin (3) of CN703 (B OUT) on the C board.
3. Enter into service mode and press 22.
4. Adjust data so that the right sides of the waveform are set to the same level.



STEREO SEPARATION ADJUSTMENT

1. Input a 1KHz stereo signal to the L-ch and a 400Hz stereo signal to the R-ch.
2. Enter into service mode and select the "Test Menu" to be TDA6612. (TDA6622 UK models.)
3. Select the Stereo Xtalk Adjustment Menu, by using the Red (Next) and Green (Previous) buttons.
4. Monitor the Scart 1 L-channel output and adjust the data so that the R-channel sound is not detected in the L-channel.

I.F. COIL ADJUSTMENT (T101) - B/G, D/K, I AND L STANDARD FOR CONTINENTAL MODELS.

1. Apply a 38.9MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for negative modulation.
3. Measure the voltage at the AFT test point and adjust (T101) to obtain 2.4V +/- 0.2V.

I.F. COIL ADJUSTMENT (T101) - I, STANDARD FOR UK MODELS.

1. Apply a 39.5MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for negative modulation.
3. Measure the voltage at the AFT test point and adjust (T101) to obtain 2.4V +/- 0.2V.

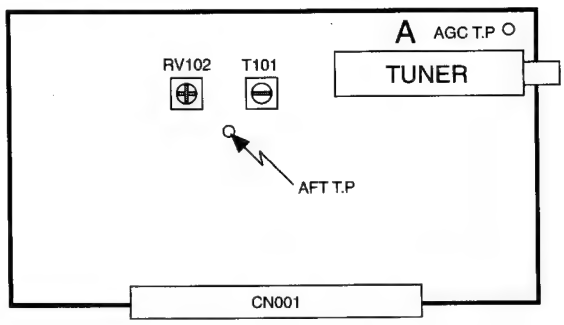
L, BAND 1 ADJUSTMENT (RV102) - L, STANDARD FOR FRENCH MODELS.

1. Apply a 33.95MHz signal at 100dBuV to the input of SWF101.
2. Receive a channel so that the I.C. is selected for positive modulation and system L band 1.
3. Measure the voltage at the AFT test point and adjust (RV102) to obtain 2.4V +/- 0.2V.

Note : Only adjust RV102 after T101 has been correctly adjusted.

AGC ADJUSTMENT

1. Receive an off- air signal.
2. Enter the service mode, ("Test" "Test") and 35.
3. Adjust the data so that there is no snow or cross - modulation visible on the screen.
4. Change the receiving off-air channel, and confirm the above status.



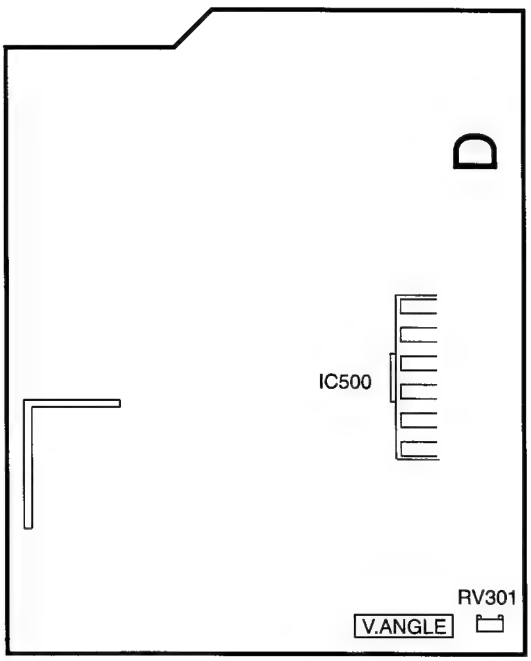
- A Board component side -

DEFLECTION SYSTEM ADJUSTMENT

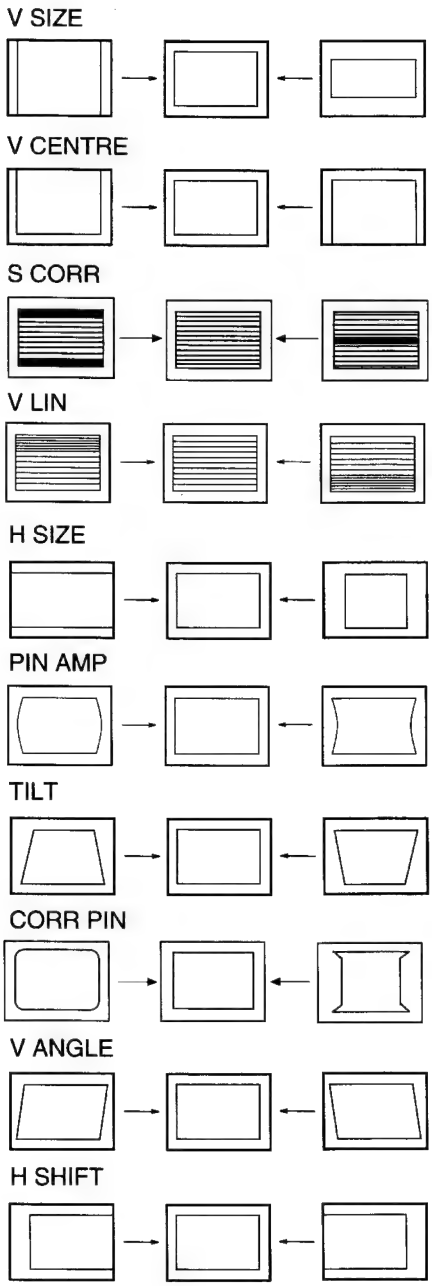
1. Enter into service mode.
2. Select and adjust each item in order to obtain the optimum image.

Item No	Adjustment item.	Data Amount
03	H SHIFT	ADJ.
04	H SIZE	ADJ.
05	PIN AMP	ADJ.
06	CORR PIN	ADJ.
07	TILT	ADJ.
08	V LINEAR	ADJ.
09	V SIZE	ADJ.
0A	S CORR	ADJ.
0B	V CENTRE	ADJ.

Note : V ANGLE is adjusted by a Variable Resistor on the 'D' Board (RV301)



- D Board Component Side -



4-3. BE-3B SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-3B chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the led (Series of flashes which must be counted) See Table 1, non fatal errors are reported with this method.

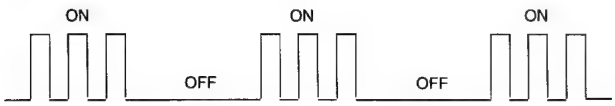
If a fatal error is found the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue operation.

Table 1

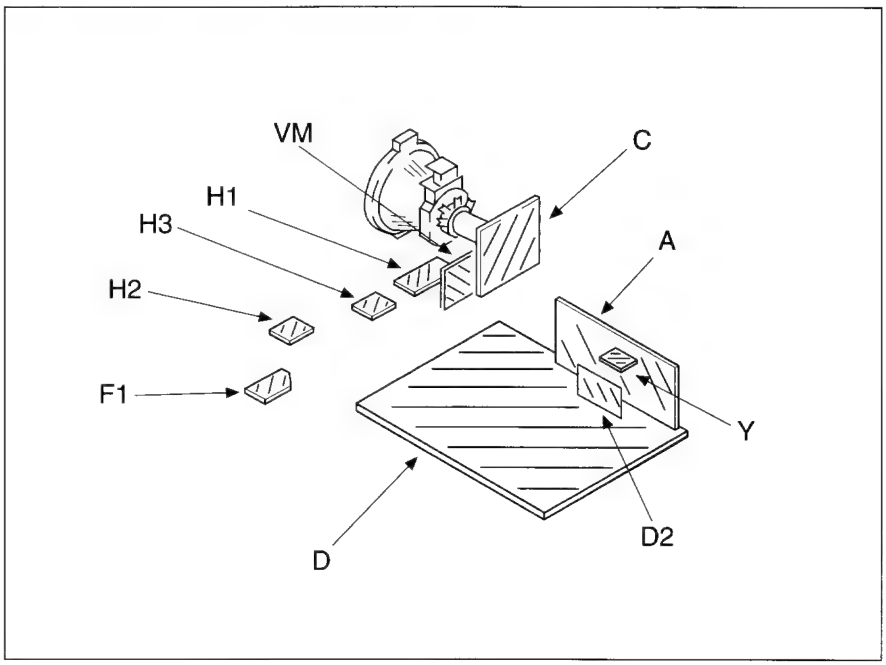
Device	LED Error Count	Fatal Error
NVM	2 .. 9	√
Teletext	10	
Jungle	11	√
Video_sw	12	
Tuner	13	√
Nicam	14	
Audio_cont	15	√

Flash Timing Example : e.g. error number 3.

Stby LED



5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  kΩ = 1000Ω , MΩ = 1000KΩ
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm
Rating electrical power ¼ W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊥ : earth - ground.
- ⏚ : earth - chassis.
- # : no mounted.

Note : The components identified by shading and marked ! are critical for safety. Replace only with the part number specified.

Note : Les composants identifies par une trame et une marque ! sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

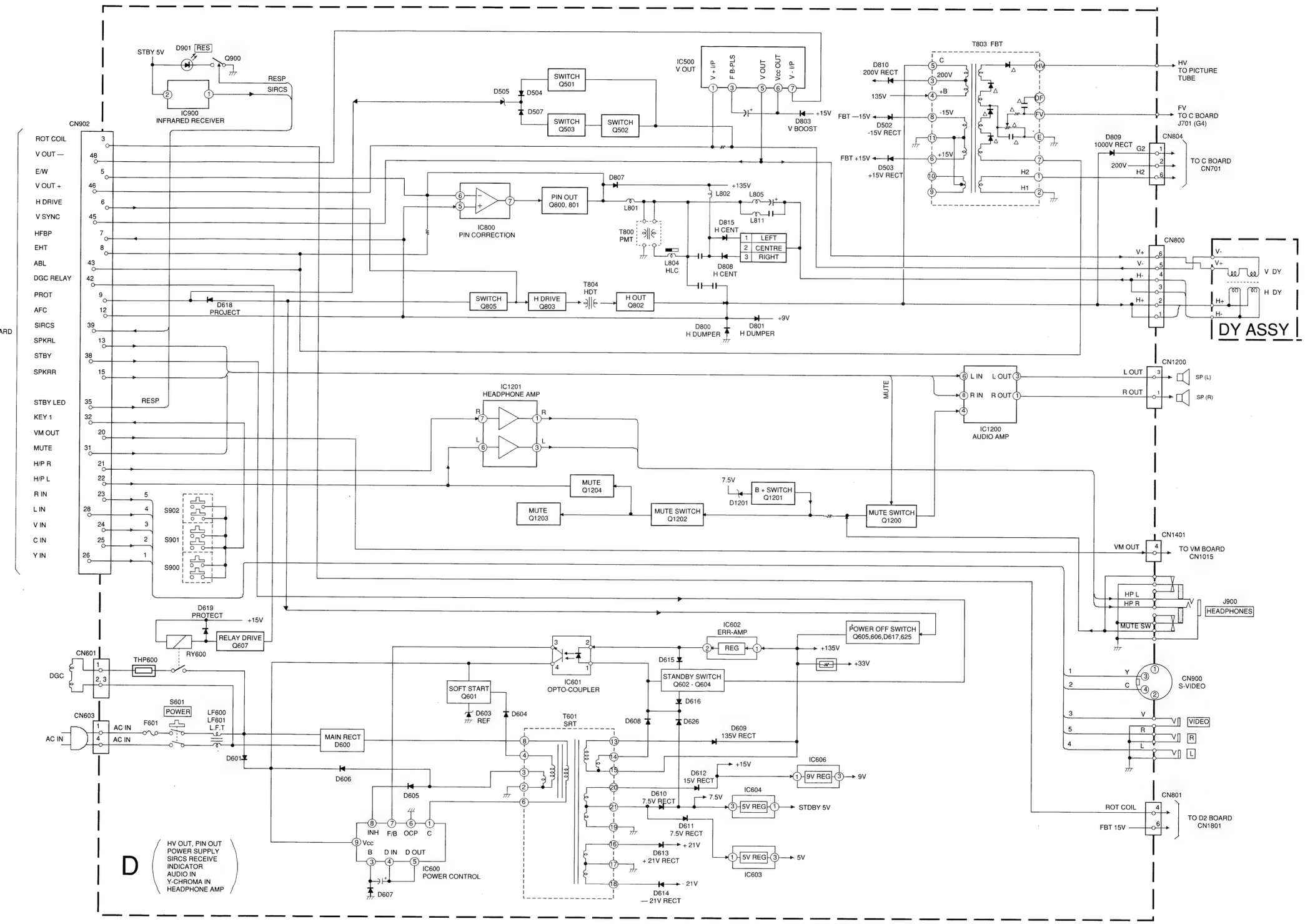
Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	:	ADJUSTABLE RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

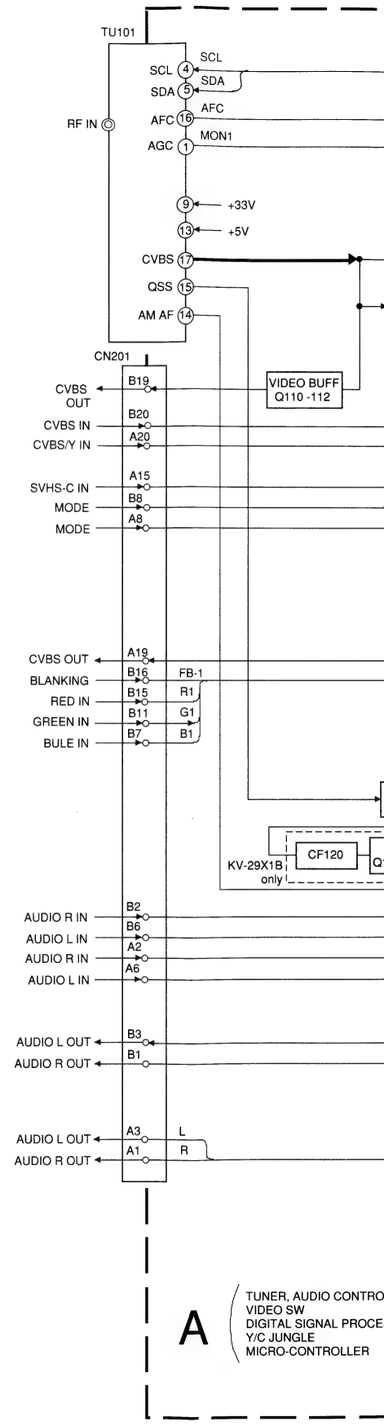
- Readings are taken with a colour-bar signal input.
- Readings are taken with 10MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- ——— : B+ bus.
- : signal path. (RF)

SECTION
DIAGRAMS

. BLOCK DIAGRAM (1)

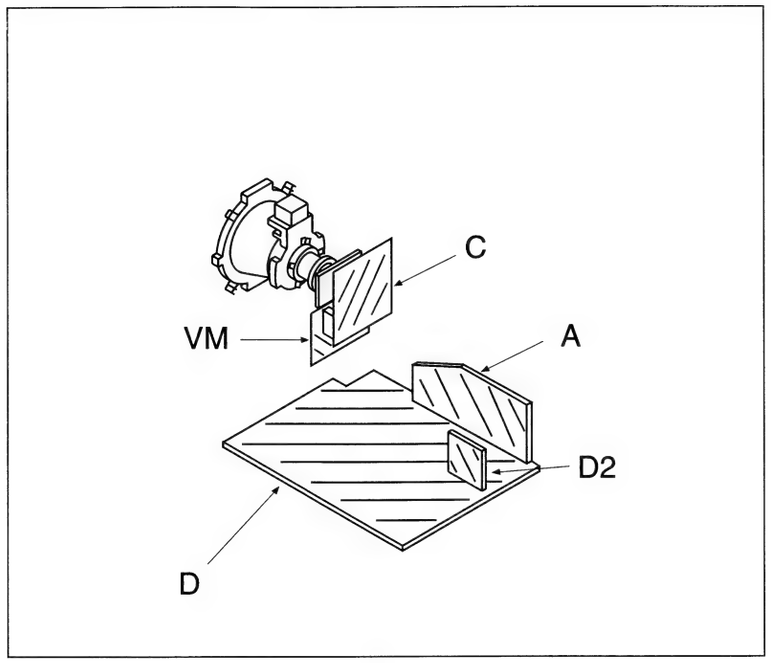


BLOCK DIAGRAM (



SCL, SDL
AFT
AGC MONT
IC201
DEO SW
V
CVBS OUT 13
VIDEO BUFF Q201
CV BS
SVHS-Y 11
SVHS-C 9
V-1
V-2
CVBS OUT AV-2 15
VIDEO BUFF Q202
V-3
V3,Y3,C3
IC202
NAL PROCESSING
L OUT HP 59
R OUT HP 60
HPL
HPR
L OUT SP 56
BUFF Q204
SPL
AM)
R OUT SP 57
BUFF Q203
SPR
IC203
AUDIO SW
L OUT AV-2 47
R OUT AV-2 48
RESET 61
BUFF Q207
BUFF Q206
1
-1
R3,L3
IC302
BASE BAND DELAY-LINE
SSCP 5
R-Y OUT 11
B-Y OUT 12
B-Y IN 14
R-Y IN 16
IC303
SECAM DECODER
R-Y OUT 11
B-Y OUT 12
CVBS IN 20
SSCP IN 19
IDENT 1
IC301
Y/C JUNGLE
50 SCL
51 SDA
1 SECAM REF
10 SSCP OUT
3 R-Y OUT
4 B-Y OUT
8 B-Y IN
7 R-Y IN
53 CVBS IN
55 SVHS-Y IN
57 SVHS-C IN
R1 12 R-1IN
G1 13 G-1 IN
B1 14 B-1 IN
FB1 11 FB-1 IN
R2 17 R-2 IN
G2 18 G-2 IN
B2 19 B-2 IN
FB2 15 FB-2 IN
COR 16 HB-2 IN
R OUT 22
G OUT 24
B OUT 26
1K IN 27
SYNC OUT 48
PROTECT Q330
HS IN 47
VS IN 46
Y OUT 5
Y IN 6
SWITCH Q300
V+ DRIVE 32
E-W 33
V-DRIVE 31
H OUT 37
AFC PIN 38
L2 FIL 39
BUFF Q332
ABL IN 28
VM 49
VM AMP Q331
SWITCH Q306
FB2
IC2
NVM
SCL 6
SDA 5
7
LEVEL SHIFT Q305
IC1
MICRO-CONTROLLER
59 SCL
58 SDA
4 WR
56 SDA 1
57 SCL 1
8 V-BLK
67 AGC MONI1
66 AFT
COIL 11
TRAP 9
16:9 3
PROT 2
DGC 78
IR 80
STBY 62
LS 64
LED 61
K1 65
MUTE 7
AMP Q80,81
74
BUFF Q1, 1002
STDBY 5V
3 +5V OUT 1
IC4 RESET
RST
16 RST 2
63
10 AUDIO SW
AUDIO SW Q205
IC3
ROM
A16
A0
D7
D0
LEVEL SHIFT Q4,5
19 A16
21
35
37 A0
38 D7
44
36 D0
RED OUT 45
GREEN OUT 46
BLUE OUT 47
BLANKING 48
COR 49
CDR
HS/SSCP 54
VS 55
VS 79
RGB-S 6
BUFF Q10
BUFF Q11
BUFF Q12
R2
G2
B2
SWITCH Q17,18
H SYNC
SWITCH Q15,16
V SYNC
BUFF Q304
AFC
CN3
R 1
G 2
B 3
CUT OFF 6
CN1
3 ROTATION COIL
V+ 48 V+ DRIVE
16:9 4 16:9
E-W 5 EAST/WEST DRIVE
V- 46 V—DRIVE
H OUT 6 H DRIVE
V SYNC 45 V SYNC
HFBP 7 H FLYBACK
EHT 8 EHT
ABL 43 ABL
RROT 9 PROTECTION
DGC 42 DGC RELAY
AFC 12 AFC
IR 39 SIRCS
SPL 13 AUDIO OUT SPEAKER
STBY 38 CHASSIS STANDBY
SPR 15 AUDIO R OUT SPEAKER
LS 16 LUMISPONDER
LED 35 STANDBY LED
K1 32 FRONT KEY 1
VM 20 VM
MUTE 31 AUDIO MUTE
HPR 21 AUDIO R OUT HP
HPL 22 AUDIO L OUT HP
R3 23 AUDIO R IN AV-3
L3 28 AUDIO L IN AV-3
V3 24 CVBS IN AV-3
C3 25 S-VHS C IN AV-3
Y3 26 S-VHS Y IN AV-3
TO D BOARD CN902
CN703
1 R
2 G
3 B
6 CUT OFF
R DRIVE, BKG Q702, 703
G DRIVE, BKG Q705, 706
B DRIVE, BKG Q708, 709
CUT OFF Q711
R OUT Q704
G OUT Q707
B OUT Q710
D701
V901
PICTURE TUBE
H RCV G2 G4 HV
TO D BOARD CN804
CN701
1 G2
2 + 200V
6 H2
D711 PROTECT
H1
H2
RCV
RV702 H STAT
RV701 SCREEN
G2 (1000V)
C (RGB OUT)
TO D BOARD T803 (FBT)
VM (VM AMP)
CN1718
CN1015
TO D BOARD CN1401
4 VM OUT
VM AMP Q1701, 1702, 1708, 1709
VM AMP BUFFER Q1704
+9V
DRIVE SW Q1707
135V
VM OUT Q1703, 1706
VM
GND
QP
VM
NECK ASSY
D2 (ROTATION AMP)
CN1801
TO D BOARD CN801
4 ROTATION
6 FBT 15V
IC1802
ROTATION AMP
ROT +
ROT -
CN1803
TO ROTATION COIL
IC1801
3 9V REG 2 FBT 15V

CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  k = 1000 , M = 1000K
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm
Rating electrical power ¼ W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊥ : earth - ground.
- ⏚ : earth - chassis.
- # : no mounted.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

Note : Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

Reference information

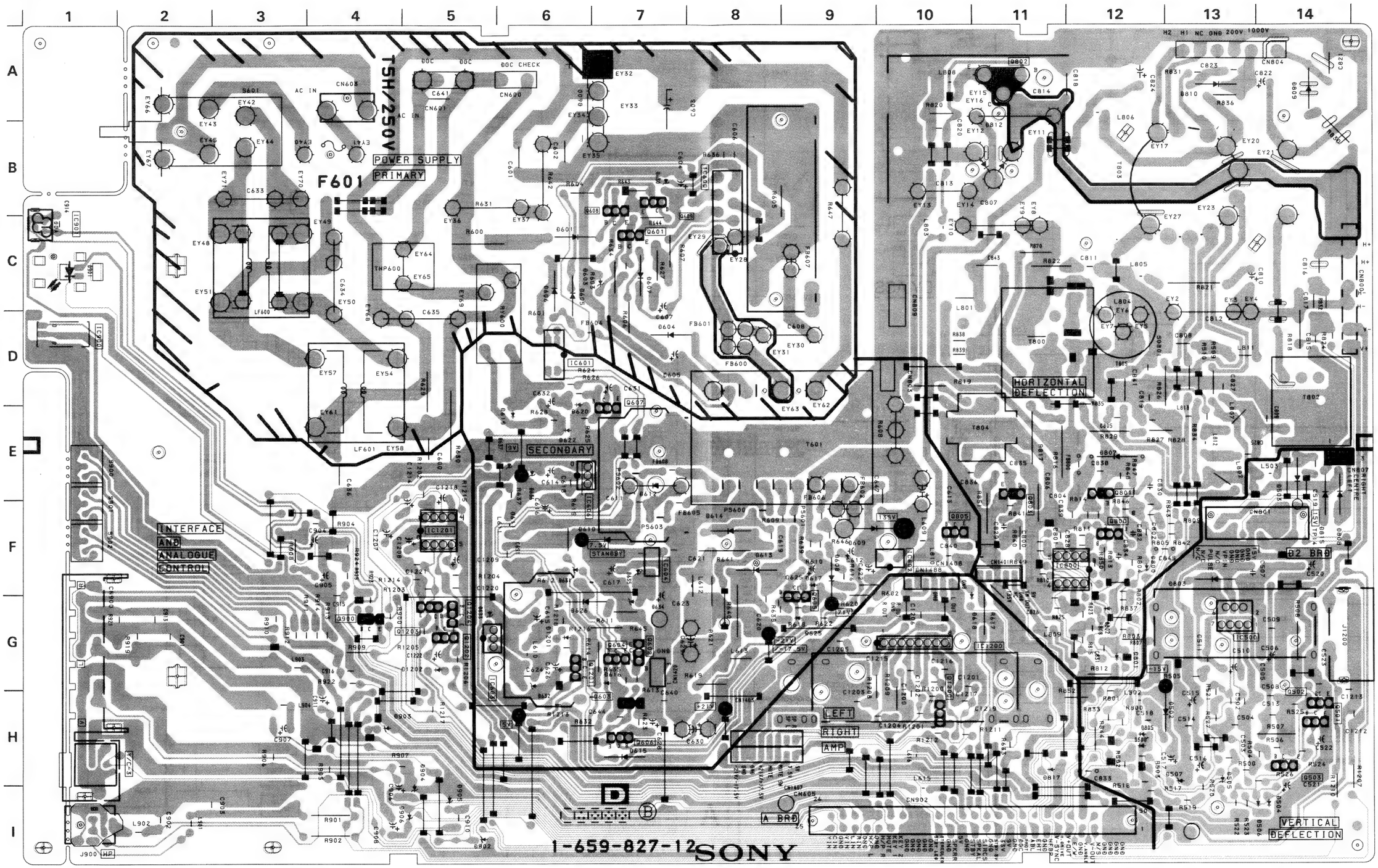
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ※	ADJUSTABLE RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

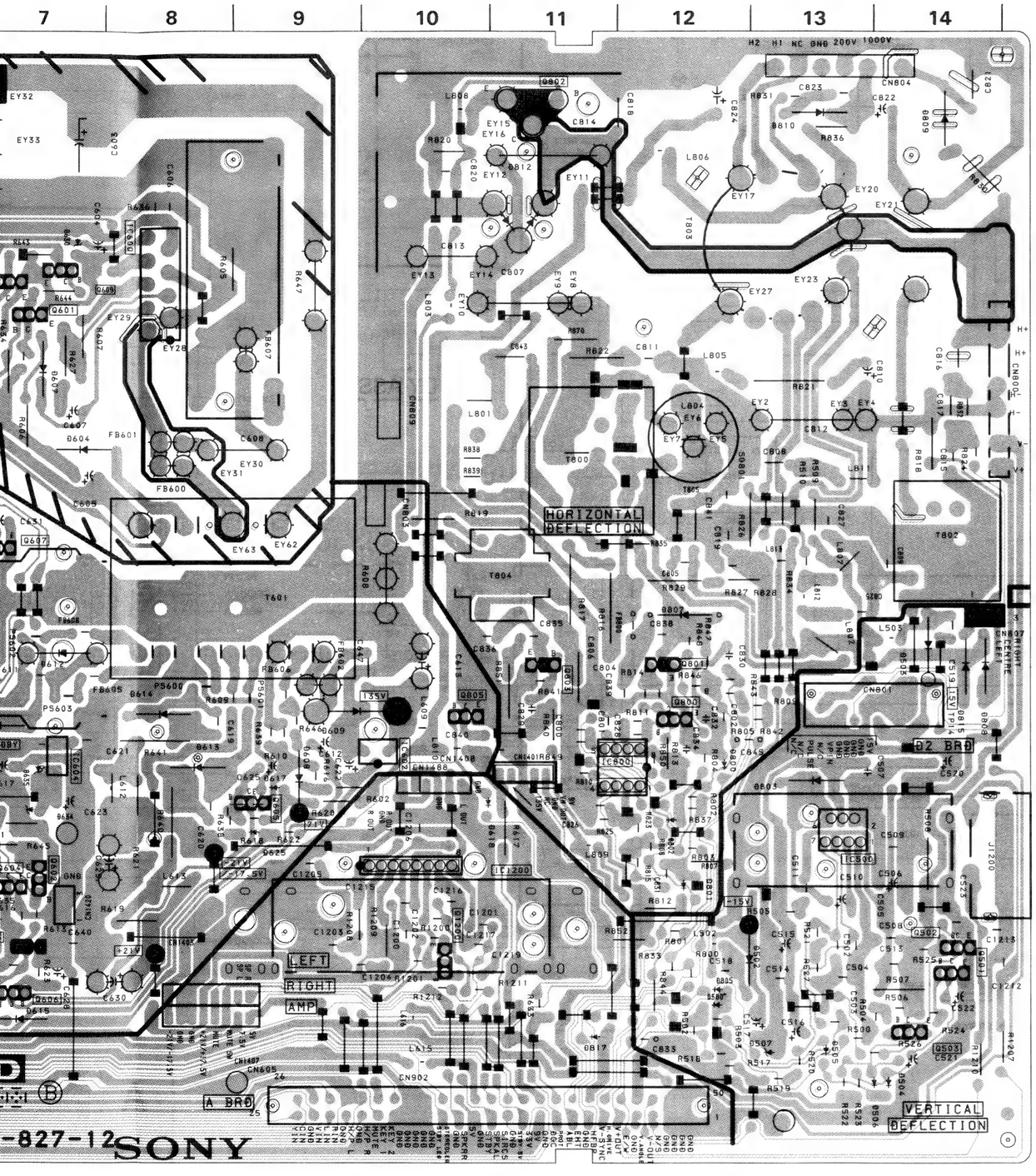
- Readings are taken with a colour-bar signal input.
- Readings are taken with 10MΩ digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- : B+ bus.
- : signal path. (RF)

D

[HV OUT, PIN OUT, POWER SUPPLY, CONTROL SW, AUDIO IN
Y-CHROMA IN, HEADPHONE IN, SIRCS RECEIVE, INDICAITON]

D Board



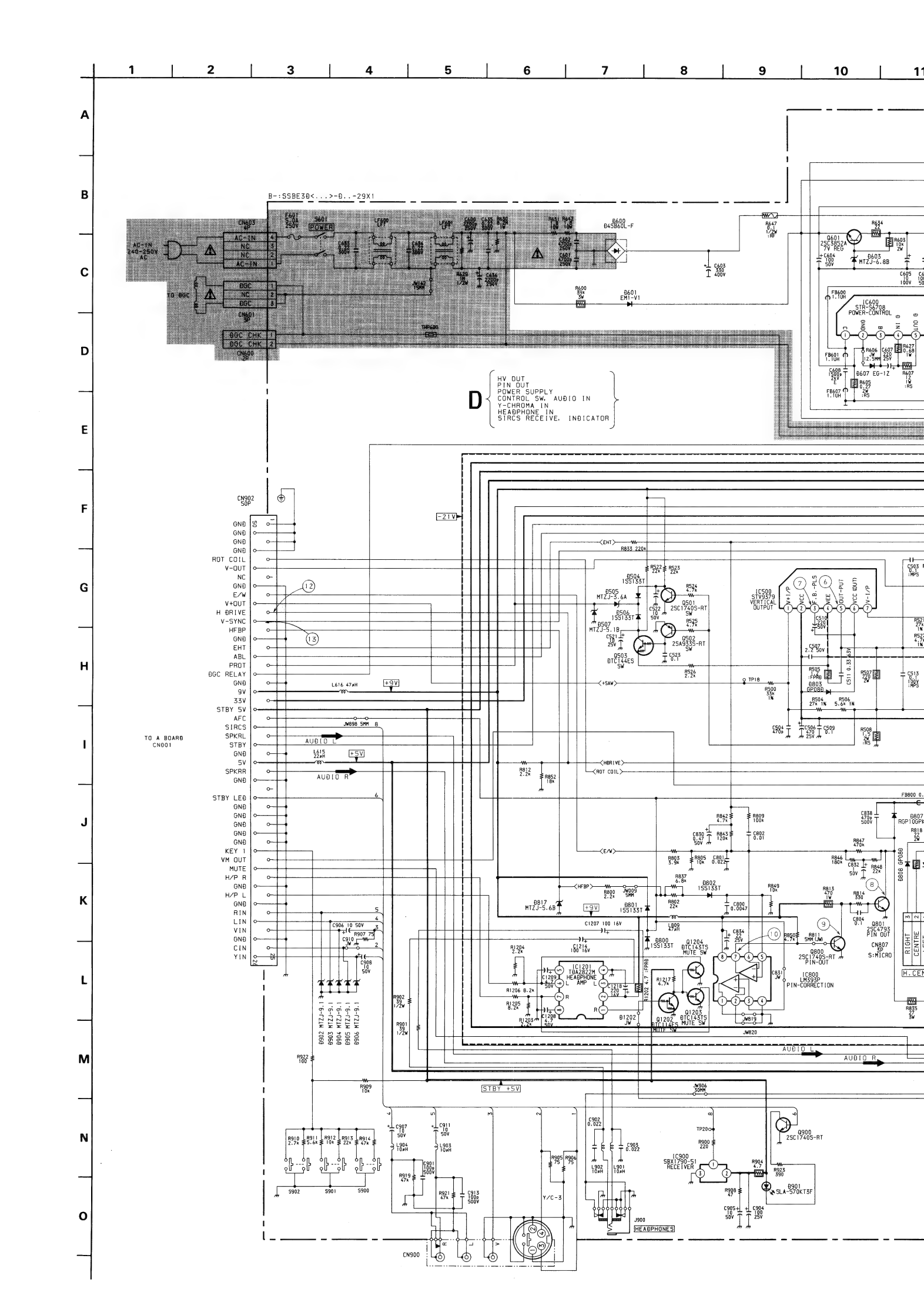


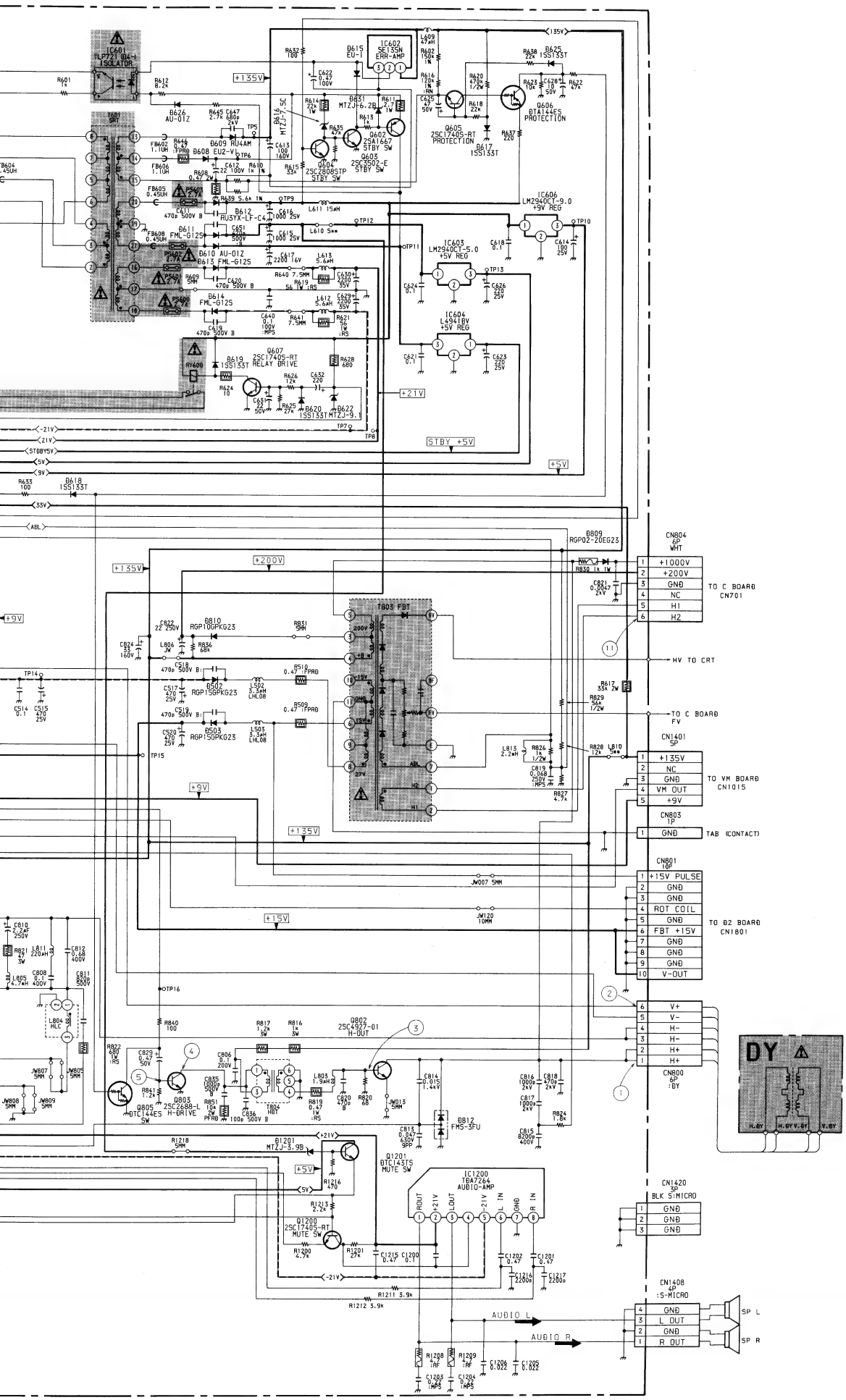
NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

D BOARD

IC	
IC500	G-13
IC600	B-8
IC601	D-6
IC602	F-10
IC603	G-5
IC604	F-7
IC606	E-6
IC800	F-12
IC900	D-1
IC1200	G-10
IC1201	F-5
TRANSISTOR	
Q501	H-14
Q502	H-14
Q503	H-14
Q601	C-7
Q602	G-7
Q603	H-7
Q604	G-7
Q605	F-9
Q606	H-7
Q607	D-7
Q800	F-12
Q801	E-12
Q802	A-11
Q803	E-11
Q805	F-10
Q900	G-4
Q1200	H-10
Q1201	G-6
Q1202	G-5
Q1203	G-5
Q1204	G-5
DIODE	
D500	H-12
D502	H-13
D503	I-14
D504	H-11
D505	H-13
D506	I-14
D507	H-13

DIODE	
D600	A-7
D601	C-6
D603	C-7
D604	D-7
D605	C-6
D606	C-6
D607	C-7
D608	F-9
D609	F-9
D610	F-7
D611	F-6
D612	E-7
D613	F-8
D614	F-8
D615	H-7
D616	G-7
D617	F-9
D618	F-11
D619	E-6
D620	E-6
D622	E-6
D625	G-9
D626	G-6
D631	F-6
D800	F-12
D801	G-12
D802	G-12
D803	F-13
D807	E-12
D808	E-14
D809	A-14
D810	A-13
D812	B-11
D815	E-14
D817	H-11
D901	C-1
D902	I-5
D903	H-4
D904	H-5
D905	I-5
D906	I-5
D1201	G-6


B-:SSBE30<...>-0..-29X1
AC-IN 240-250V AC
AC-IN
NC
NC
AC-IN
TO BGC
BGC
NC
BGC
BGC CHK
BGC CHK
CN603 4P
CN601 3P
CN600 2P
POWER
B600 B4SB60L-F
Q601 2SC3852A 7V REG
D603 MTZJ-6.8B
IC600 STR-S6708 POWER-CONTROL
B607 EG-1Z
D601 EM1-V1
THP600
D HV OUT
PIN OUT
POWER SUPPLY
CONTROL SW. AUDIO IN
Y-CHROMA IN
HEADPHONE IN
SIRCS RECEIVE. INDICATOR
CN902 50P
-21V
+9V
+5V
+SAW
EHT
HDRIVE
ROT COIL
E/W
HFBP
GND
9V
33V
STBY 5V
AFC
SIRCS
SPKRL
STBY
5V
SPKRR
STBY LED
KEY 1
VM OUT
MUTE
H/P R
H/P L
RIN
LIN
VIN
CIN
YIN
AUDIO L
AUDIO R
TO A BOARD CN001
IC500 STV9379 VERTICAL OUTPUT
IC1201 TDA2822M HEADPHONE AMP
IC800 LM2902 PIN-CORRECTION
Q800 2SC1740S-RT PIN-OUT
Q801 2SC4793 PIN OUT
Q900 2SC1740S-RT
IC900 SBX1790-51 RECEIVER
B901 SLA-570KT3F
CN807 S.MICRO
RIGHT
CENTRE
H.CEN
HEADPHONES
CN900
S900
S901
S902
Y/C-3

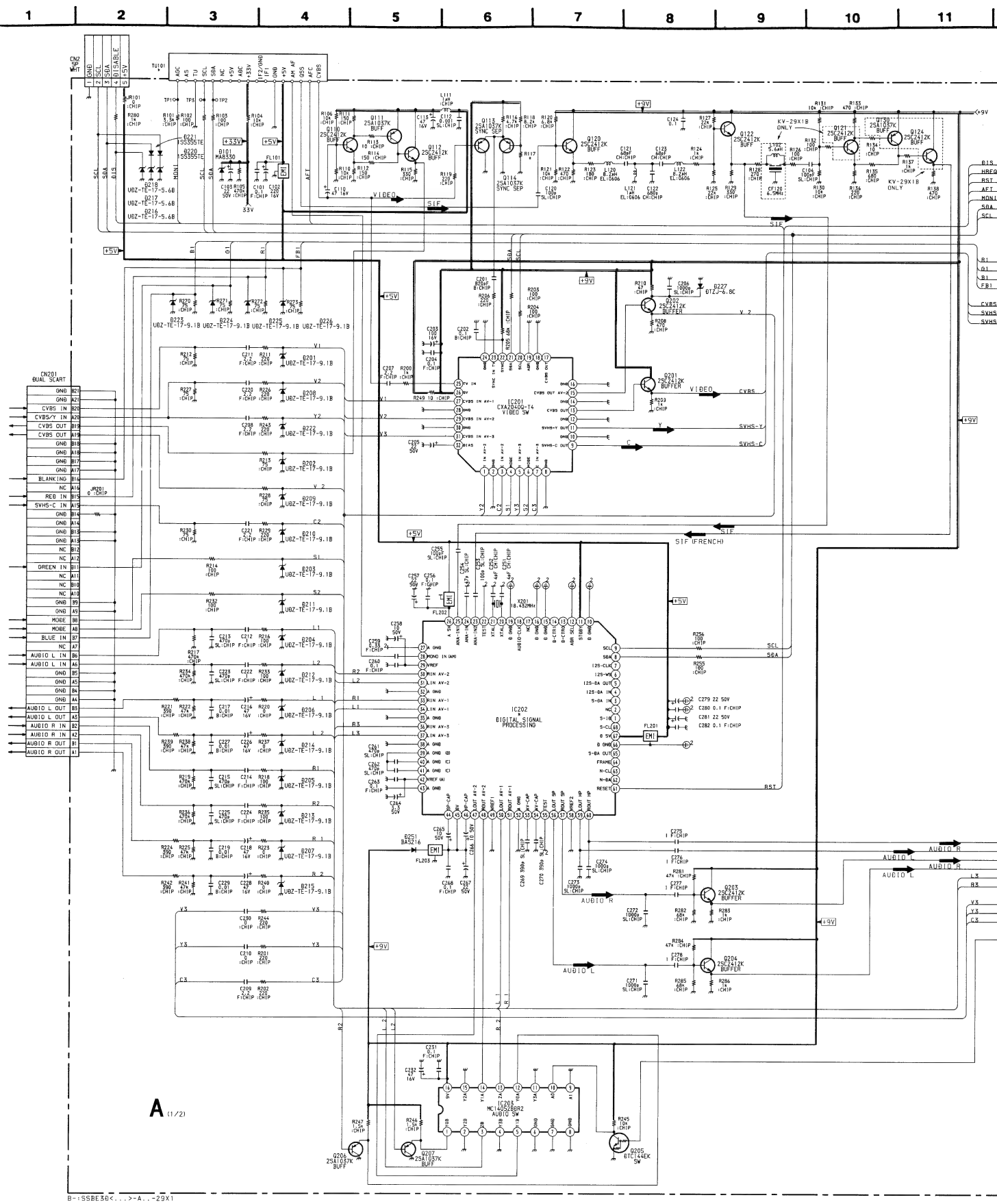

IC401 PC817 (D4-) ISOLATOR
IC602 SE135N ERR-AMP
IC606 LM2940CT-9.0 +9V REG
IC603 LM2940CT-5.0 +5V REG
IC604 L4941BV +5V REG
Q607 2SC1740S-RT RELAY DRIVE
Q605 2SC1740S-RT PROTECTION
Q606 BTA144ES PROTECTION
Q602 2SA1667 STBY SW
Q603 2SC3502-E STBY SW
Q604 2SC2808STP STBY SW
RY600
T601 SMPS
T803 FBT
Q802 2SC4927-01 H-OUT
Q803 2SC2688-L H-DRIVE
Q805 BTC144ES
Q1201 BTC143TS MUTE SW
Q1200 2SC1740S-RT MUTE SW
IC1200 TDA7264 AUDIO-AMP
D809 RGP02-20EG23
D810 RGP10PKG23
D502 RGP15PKG23
D503 RGP15PKG23
D812 FMS-3FU
D1201 MTZJ-3.9B
CN804 6P WHT
+1000V
+200V
GND
NC
H1
H2
TO C BOARD CN701
HV TO CRT
TO C BOARD FV
CN1401 5P
+13.5V
NC
GND
VM OUT
+9V
TO VM BOARD CN1015
CN803 1P
GND
TAB (CONTACT)
CN801 10P
+15V PULSE
GND
GND
ROT COIL
GND
FBT +15V
GND
GND
GND
V-OUT
TO B2 BOARD CN1801
CN800 6P :DY
V+
V-
H-
H-
H+
H+
DY
H.DY
H.DY.V.DY
V.DY
CN1420 3P BLK S:MICRO
GND
GND
GND
CN1408 4P :S-MICRO
GND
L OUT
GND
R OUT
SP L
SP R
AUDIO L
AUDIO R
+135V
+200V
+9V
+15V
+21V
-21V
+5V
STBY +5V
5V
33V
ABL

D BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter
Q501	-0.1	0.2	-
Q502	0.1	-5.8	-
Q503	-5.8	-12.0	-12.0
Q602	72.0	7.5	72.7
Q603	0	72.0	-
Q604	0.7	-	-
Q605	0.5	-	0.3
Q606	-	-	12.0
Q607	-	12.0	-
Q800	0.2	3.1	-
Q801	0.3	17.0	-
Q802	-0.2	143.3	-
Q803	-0.6	99.8	-
Q805	-	3.6	-
Q900	-	5.4	-
Q1200	2.9	21.5	4.6
Q1201	3.4	5.0	3.0
Q1202	2.8	-	-

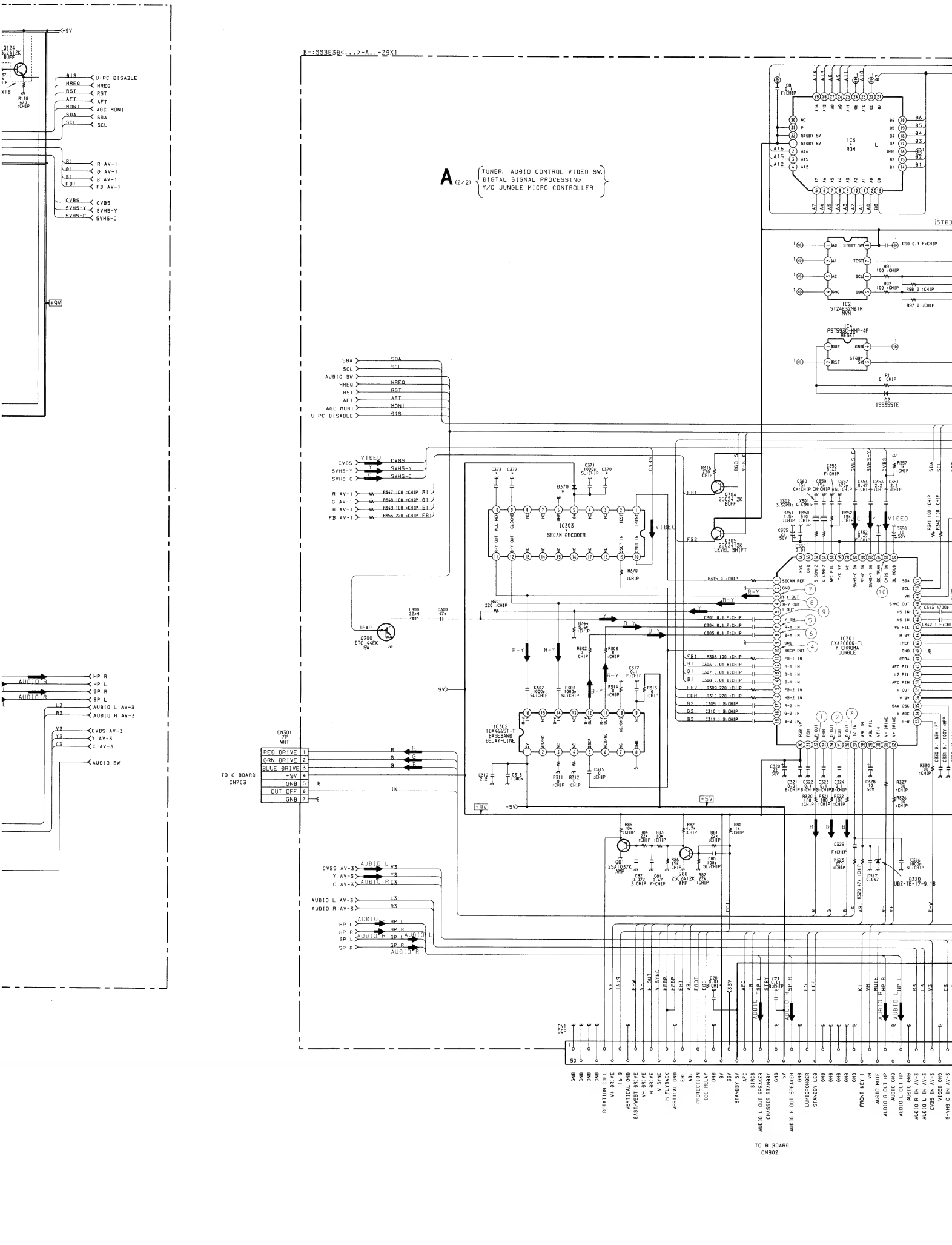
D BOARD IC VOLTAGE TABLE

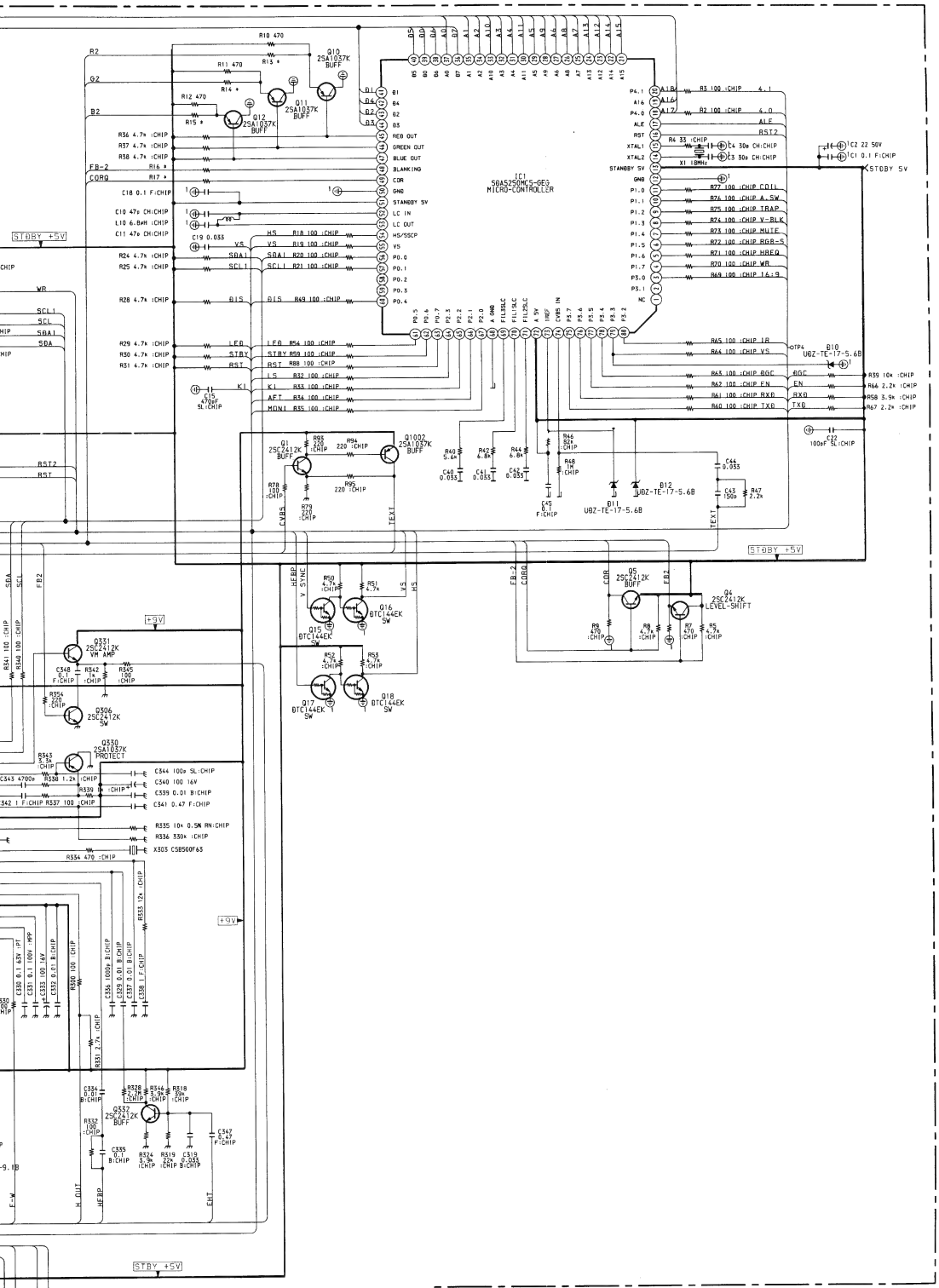
IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC500	1	1.5
	2	15.0
	3	-12.3
	4	-14.0
	5	0.1
	6	15.2
	7	1.4
IC600	1	170.0
	2	-62.4
	3	-62.6
	4	-62.2
	5	-62.0
	6	-62.6
	7	-62.4
	8	-62.0
	9	-58.0
IC601	1	64.3
	2	63.0
	3	-62.5
	4	-58.6
IC602	1	135.0
	2	63.2
	3	-0.1
IC800	3	0.9
	5	1.5
	6	2.0
	7	0.2
	8	9.0
IC1200	2	21.7
	4	21.5
	5	-21.7
IC1201	1	4.0
	2	9.0
	3	4.0
	5	0.5
	8	0.5



A BOARD * MARK

Ref. No. \ Model	29X1A	29X1B	29X1D	29X1E	29X1K	29X1L	29X1R	29X1U
C370	—	2.2UF	2.2UF	2.2UF	2.2UF	—	2.2UF	—
C372	—	0.1UF	0.1UF	0.1UF	0.1UF	—	0.1UF	—
C373	—	0.22UF	0.22UF	0.22UF	0.22UF	—	0.22UF	—
D370	—	BAS216	BAS216	BAS216	BAS216	—	BAS216	—
IC3	TMS27PC010A-15FMBE101	TMS27PC010A-15FMBE101	TMS27PC010A-15FMBE101	TMS27PC010A-15FMBW101	TMS27PC010A-15FMBE101	TMS27PC010A-15FMBW101	TMS27PC010A-15FML	TMS27PC010A-15FMBW101
IC202	MSP3400C-PS	MSP3410-15	MSP3400C-PS	MSP3410-15	MSP3400C-PS	MSP3410-15	MSP3400C-PS	MSP3410-15
IC303	—	TDA8395T	TDA8395T	TDA8395T	TDA8395T	—	TDA8395T	—
R13	150	—	150	150	150	150	150	150
R14	150	—	150	150	150	150	150	150
R15	150	—	150	150	150	150	150	150
R16	100	—	100	100	100	100	100	100
R17	100	—	100	100	100	100	100	100
R117	1.8K	1.8K	1.8K	1.8K	1.8K	1.8K	1.8K	2.0K
TU101	TUVIF (AEP)	TUVIF (FR)	TUVIF (AEP)	TUVIF (AEP)	TUVIF (AEP)	TUVIF (AEP)	TUVIF (AEP)	TUVIF (UK)


A (2/2) { TUNER, AUDIO CONTROL VIDEO SW.
DIGTAL SIGNAL PROCESSING
Y/C JUNGLE MICRO CONTROLLER }
IC3 ROM
IC2 ST24E32M6TR NVM
IC4 PST593C-MMP-4P RESET
IC303 SECAM DECODER
IC301 CXA2000Q-TL Y CHROMA JUNGLE
IC302 TDA4665T-T BASEBAND DELAY-LINE
Q304 2SC2412K BUFF
Q305 2SC2412K LEVEL SHIFT
Q300 DTC144EK SW
Q80 2SC2412K AMP
Q81 2SA1037K AMP
CN301 7P WHT
RED DRIVE
GRN DRIVE
BLUE DRIVE
+9V
GND
CUT OFF
GND
TO C BOARD CN703
CN1 50P
TO B BOARD CN902
SDA
SCL
AUDIO SW
HREQ
RST
AFT
AGC MONI
U-PC DISABLE
CVBS
SVHS-Y
SVHS-C
R AV-1
G AV-1
B AV-1
FB AV-1
HP R
HP L
SP R
SP L
AUDIO L AV-3
AUDIO R AV-3
CVBS AV-3
Y AV-3
C AV-3
AUDIO SW
+9V
+5V
GND
ROTATION COIL
V+ DRIVE
16:9
VERTICAL GND
EAST/WEST DRIVE
H DRIVE
V SYNC
H FLYBACK
VERTICAL GND
EHT
ABL
PROTECTION
B2C RELAY
GND
9V
33V
STANDBY 5V
AFC
SIRCS
AUDIO L OUT SPEAKER
CHASSIS STANDBY
GND
5V
AUDIO R OUT SPEAKER
GND
LUMISPONDER
STANBBY LED
GND
GND
GND
GND
FRONT KEY 1
VM
AUDIO MUTE
AUDIO R OUT HP
AUDIO GND
AUDIO L OUT HP
AUDIO GND
AUDIO R IN AV-3
AUDIO L IN AV-3
CVBS IN AV-3
V IDEO GND
S-VHS C IN AV-3



A (1/2) BOARD IC VOLTAGE TABLE

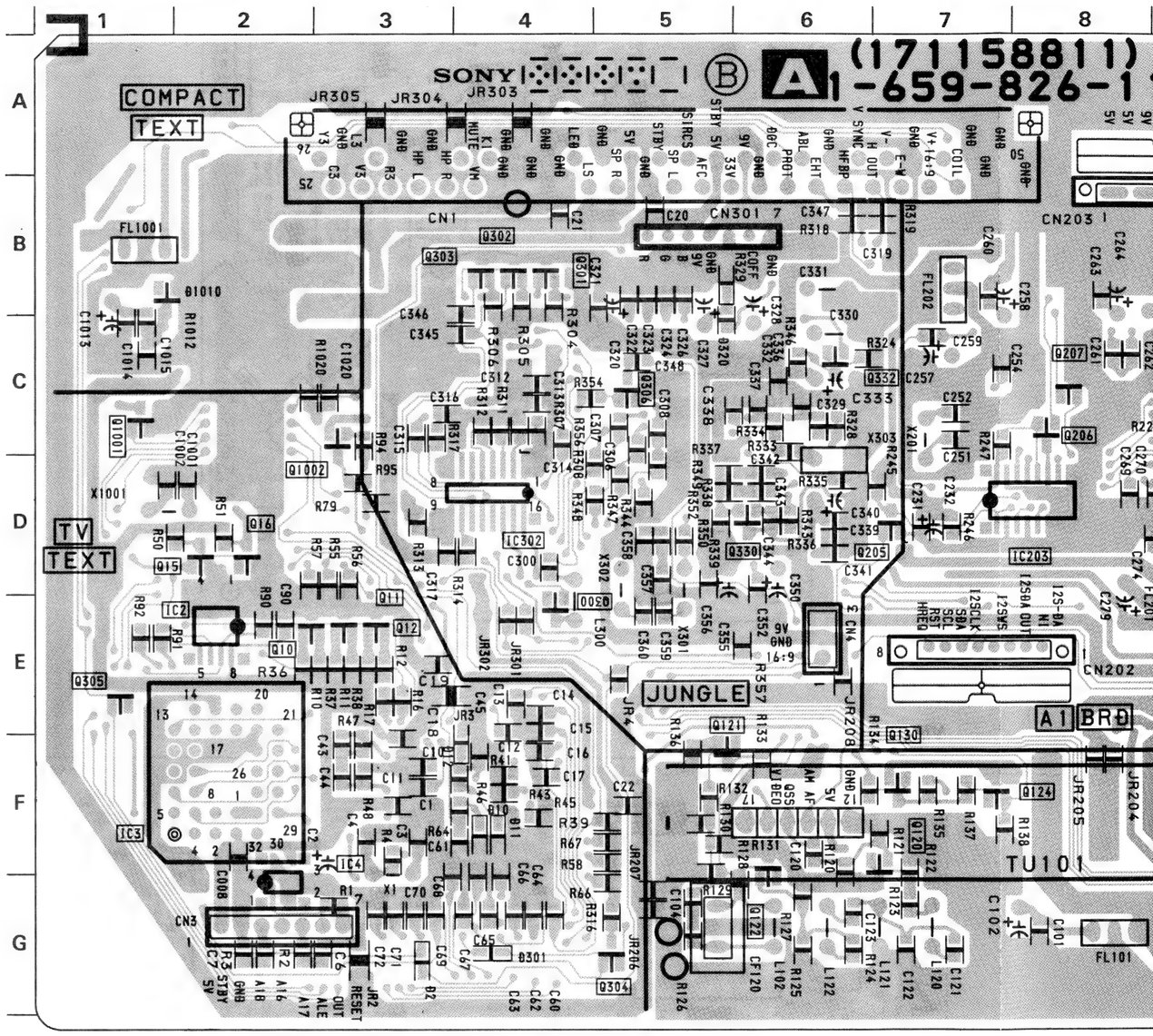
IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC201	13	4.4
	15	4.4
	20	3.5
	21	2.7
	22	4.9
	23	4.4
	24	0
	25	4.4
	26	8.8
	32	4.4
IC202	4	2.8
	6-7	0.1
	8	3.0
	9	3.6
	11	4.7
	13	4.7
	20-21	2.4
	23	0.2
	25	1.5
	26	4.8
	28	3.8
	29	2.6
	39-42	3.8
	44	7.1
	45	8.0
	46	7.1
	47-48	3.8
	53-54	3.8

A (2/2) BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter
Q1	3.7	4.8	3.1
Q4	0.1	4.8	-
Q5	0.7	4.8	4.0
Q15	-	4.3	-
Q16	4.3	0.2	-
Q17	0.4	3.5	-
Q18	3.5	0.7	-
Q80	2.6	2.2	-
Q81	2.4	-	3.0
Q304	-	4.8	-
Q305	-	4.8	-
Q330	4.5	-	5.1
Q331	6.3	8.8	5.7
Q332	3.1	8.8	2.5
Q1001	4.4	-	-

A (1/2) BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter
Q110	1.8	8.2	1.2
Q112	1.5	8.8	0.8
Q113	1.8	-	-
Q114	5.4	6.0	-
Q120	84.3	8.8	3.7
Q121	1.5	5.4	0.9
Q122	5.4	8.8	4.7
Q124	-	8.8	-
Q201	4.4	8.8	3.7
Q202	4.4	8.8	3.7



WAVEFORMS A BOARD

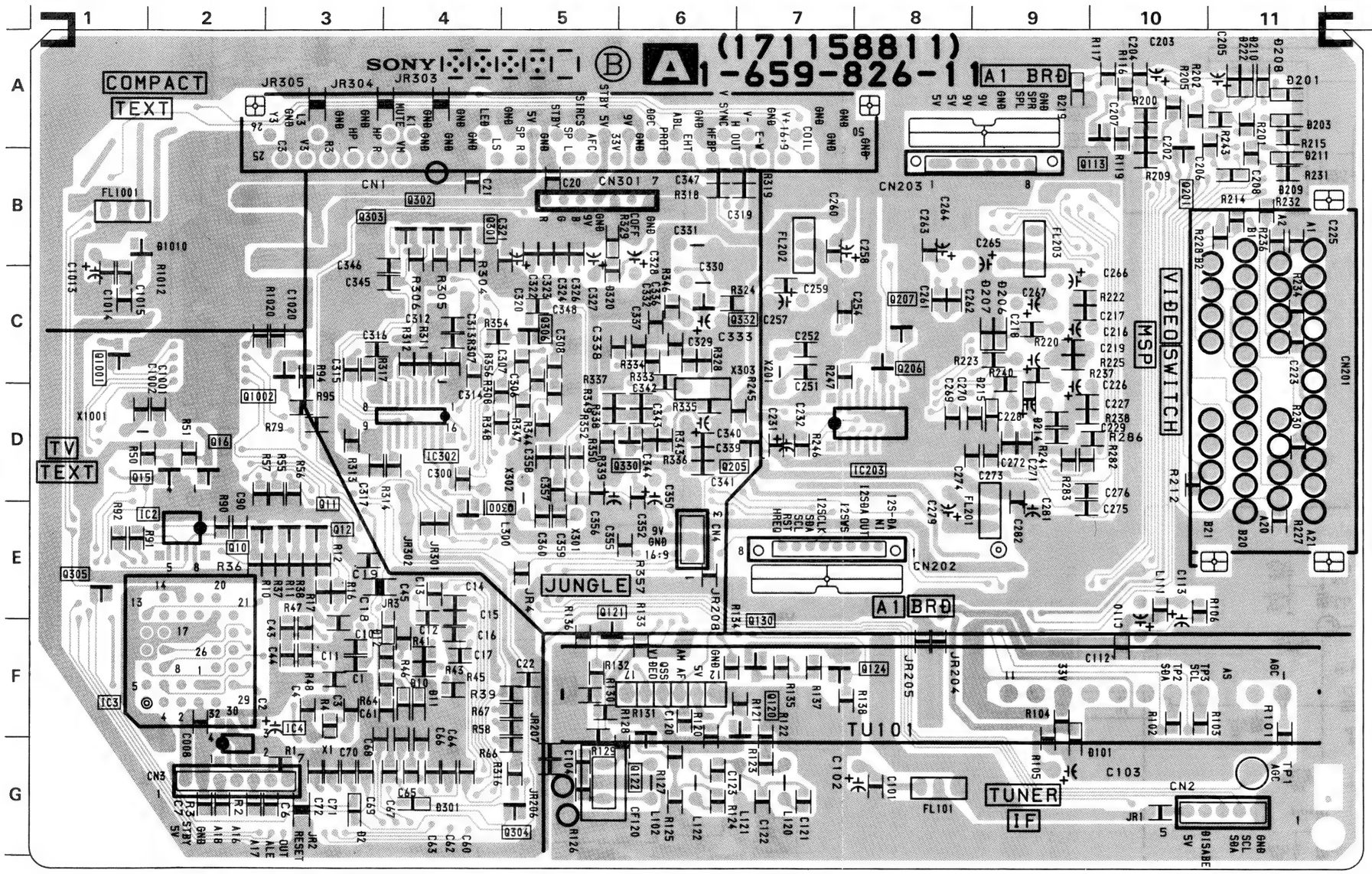
A (2/2) BOARD IC VOLTAGE TABLE

IC Voltage Table

Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC1	2	3.6	IC301	5	3.6	IC301	61	5.0
	3-4	4.8		6	5.0		62	7.6
	5	0.5		7-8	5.4	IC302	1	4.8
	7	4.8		10	0.6		5	0.7
	9	4.8		12-14	5.4		9	4.8
	11	2.4		16	4.0		11-12	3.0
	13	4.8		17-19	5.4		14	1.3
	14-15	2.3		20	8.8		16	1.3
	16-17	4.8		22-23	2.2	IC303	5	8.0
	48	4.0		24	2.0		3.2	10
	51	4.8		25	2.4		11	5.6
	52-53	2.4		26	2.0		0	19
	54	0.7		27	4.0		20	3.7
	55	0.2		28	6.6		4	0.2
	56-57	4.8		29	8.8		5	0.7
	58	2.8		31-33	3.0	IC1001	4	0.2
	59	3.5		34	4.0		5	0.7
	60	2.4		35	4.6		6	1.7
	62	0.7		36	8.8		7	1.8
	63	4.4		37	3.1		10	0.4
	65	4.8		38	3.4		11-12	4.8
	66	2.1		39	5.3		16	4.8
	67	2.0		40	4.2		17	0
	69-71	2.3		41	2.3		21	4.8
	72	4.8		43	1.7		23	3.0
	73	1.5		44	8.8		25	4.8
	74	1.2		45	2.5		56	0
	75-77	4.8		46	3.9		61	1.3
	79	0.2		47	3.0		62-63	1.4
	80	4.8		48	4.4		64	0
IC2	5-8	4.8		49	6.3		66	4.6
IC3	1	4.8		50-51	0.1		67	4.7
	31-32	4.8		53	3.9		68	4.0
IC4	1	4.8		54	5.0			
	3	4.8		55-56	4.2			
IC301	1	1.5		58-59	8.8			
	3-4	5.6		60	5.3			

A [TUNER, AUDIO CONTROL VIDEO SW, DIGITAL SIGNAL PROCESSING
Y/C JUNGLE MICRO CONTROLLER]

A Board <Conductor Side>

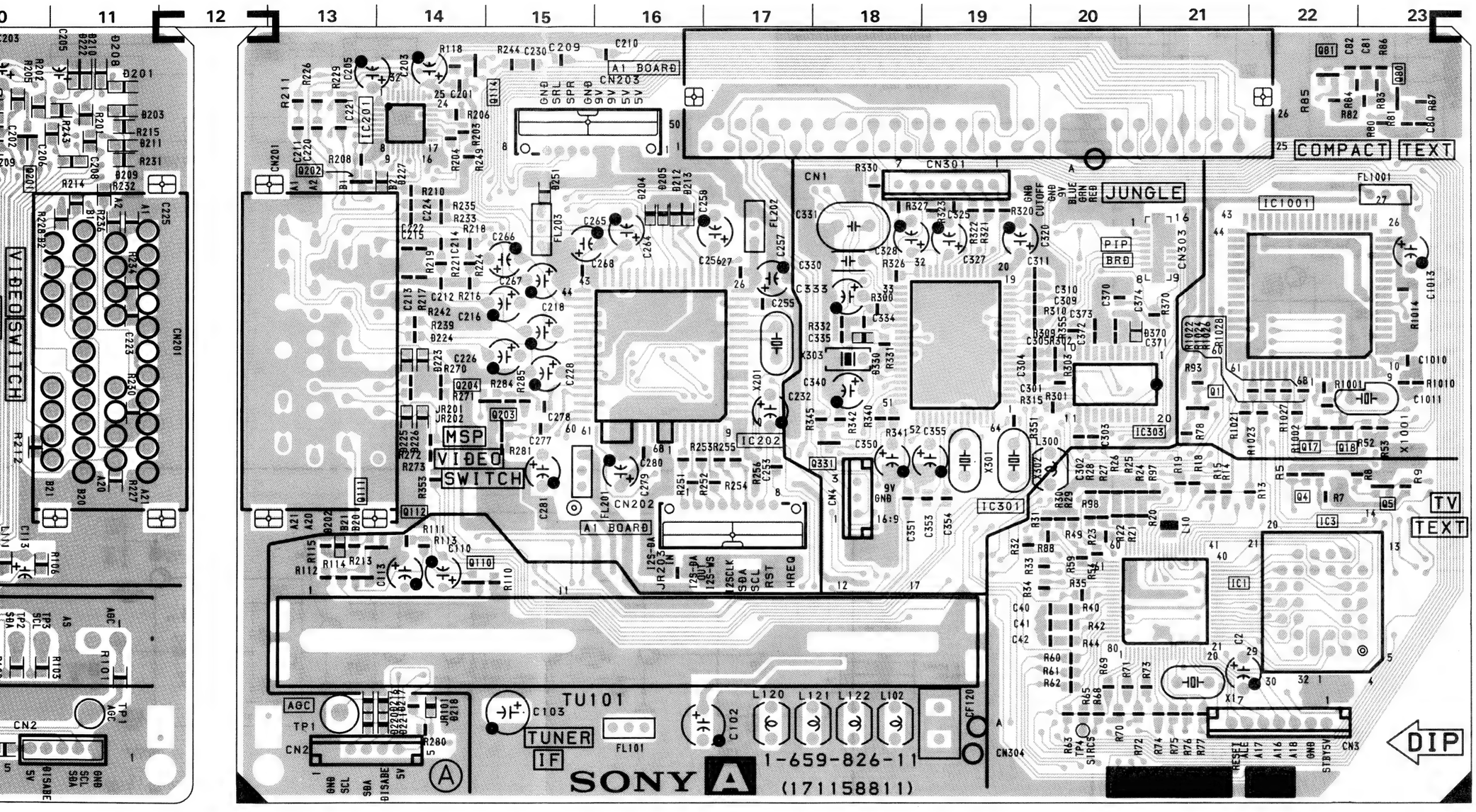


A TUNER, AUDIO CONTROL VIDEO SW, DIGITAL SIGNAL PROCESSING
Y/C JUNGLE MICRO CONTROLLER

A Board <Conductor Side>

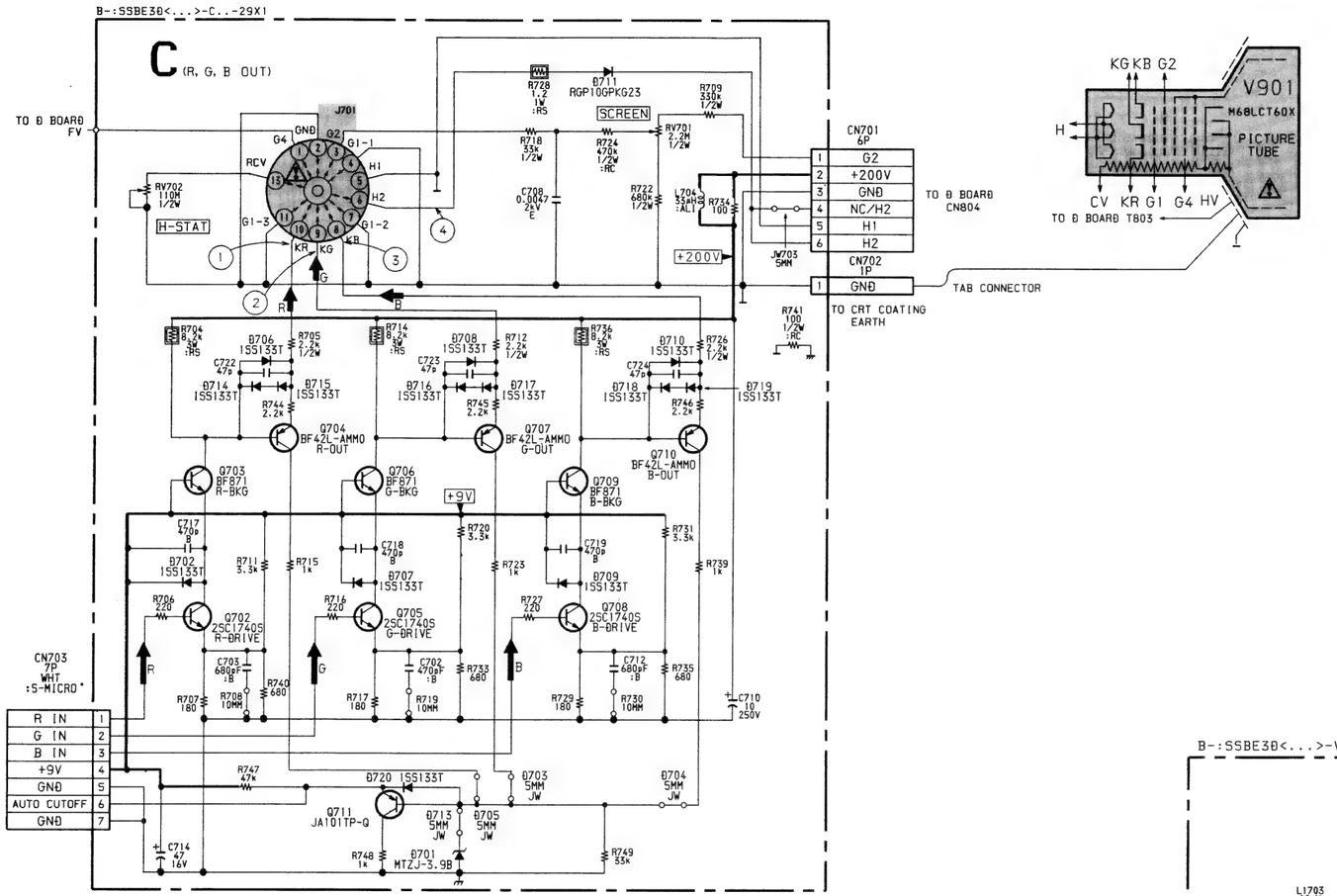
A Board <Component Side>

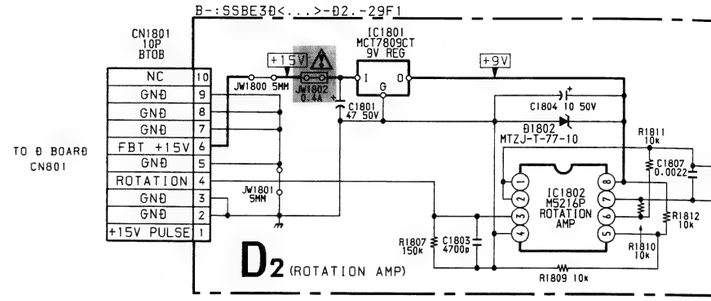
A Board <Component Side>

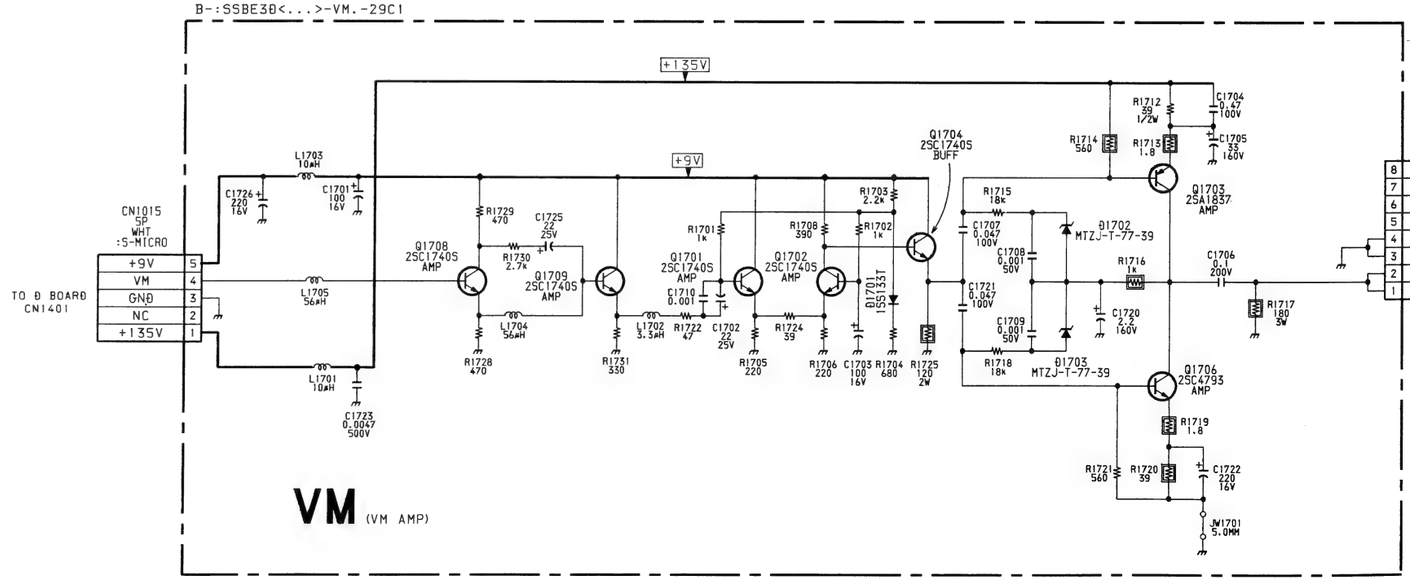


A BOARD

IC		Q305	E-1
IC1	F-21	Q306	C-5
IC2	E-2	Q330	D-6
IC3	F-2	Q331	D-18
IC4	G-2	Q332	C-6
IC201	A-14	Q1002	C-3
IC202	C-16	DIODE	
IC203	D-8	D2	G-3
IC301	C-19	D10	F-10
IC302	D-4	D11	F-10
IC303	D-21	D12	F-4
TRANSISTOR		D101	F-9
Q1	D-21	D201	A-11
Q4	E-22	D202	E-13
Q5	E-23	D203	A-11
Q10	E-2	D204	B-16
Q11	E-3	D205	B-16
Q15	D-2	D206	C-9
Q16	D-2	D207	C-9
Q17	D-22	D208	A-11
Q18	D-23	D209	B-11
Q80	A-23	D210	A-11
Q81	A-22	D211	B-11
Q110	F-14	D212	B-16
Q111	E-14	D213	B-16
Q112	E-14	D214	D-9
Q113	A-10	D215	D-9
Q114	A-14	D216	G-14
Q120	F-7	D217	G-14
Q121	F-5	D218	G-14
Q122	F-6	D220	G-14
Q124	F-7	D221	D-14
Q130	F-7	D222	D-14
Q201	B-10	D223	D-14
Q202	B-13	D224	D-14
Q203	D-15	D225	D-14
Q204	D-15	D226	D-14
Q205	D-7	D227	B14
Q206	C-8	D251	B-15
Q207	C-8	D320	C-5
Q300	E-4	D370	C-21
Q304	G-5		

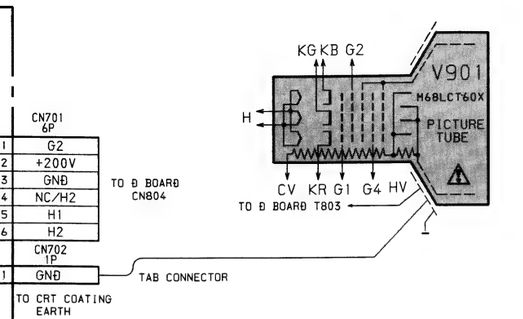


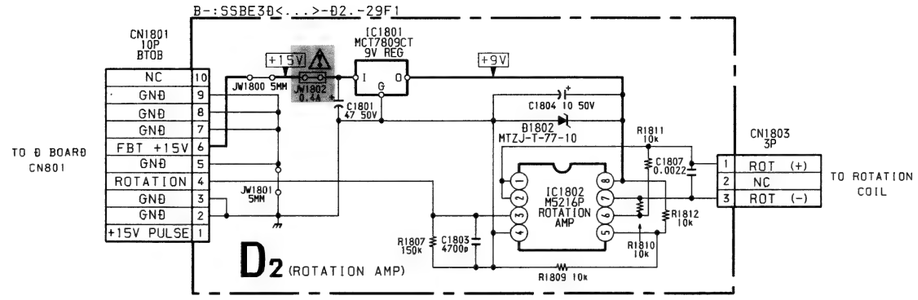


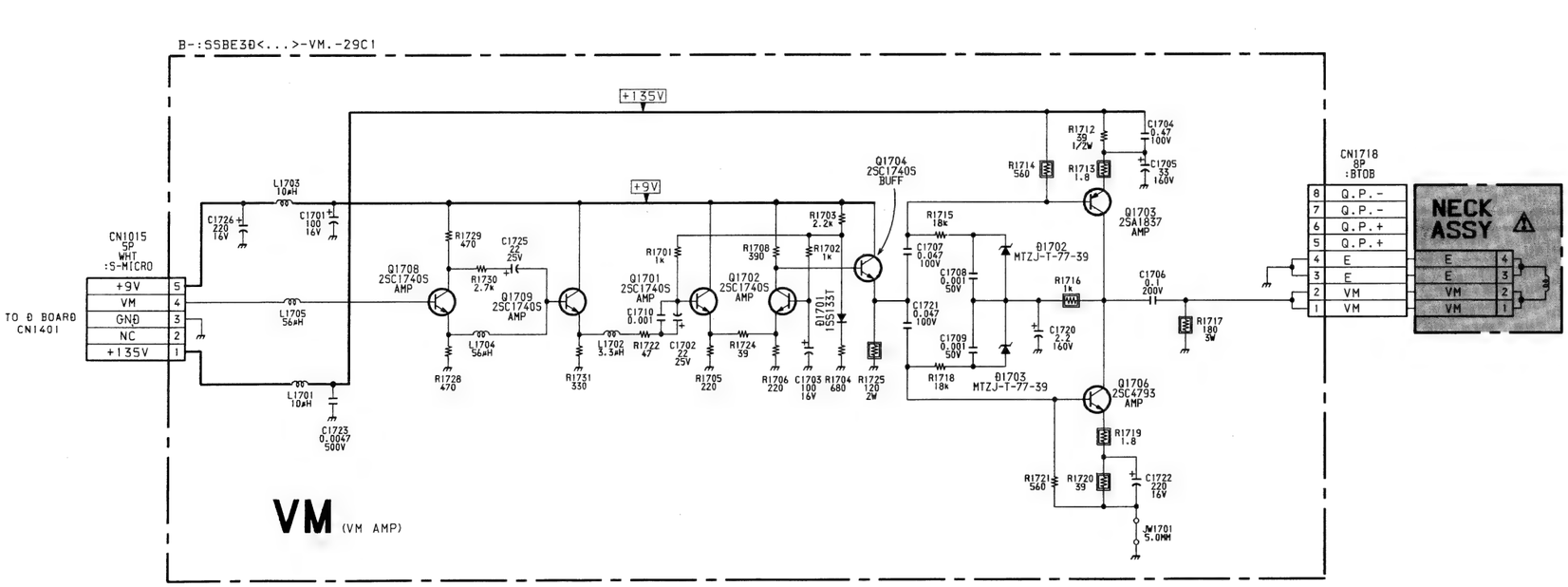


WAVEFORMS C BOARD

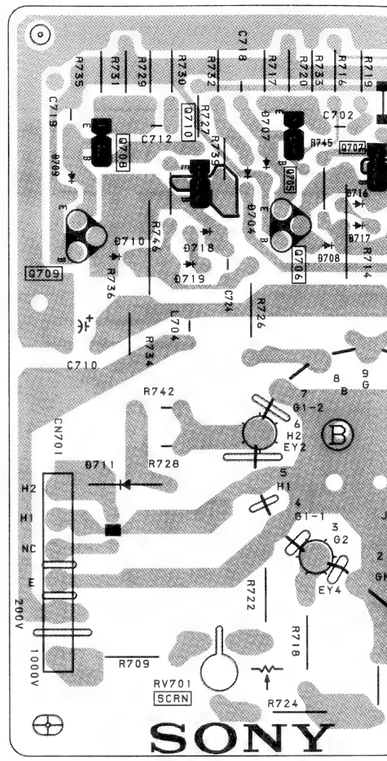
①	②	③	④
110 Vp-p (H)	108 Vp-p (H)	90 Vp-p (2H)	21 Vp-p (2H)



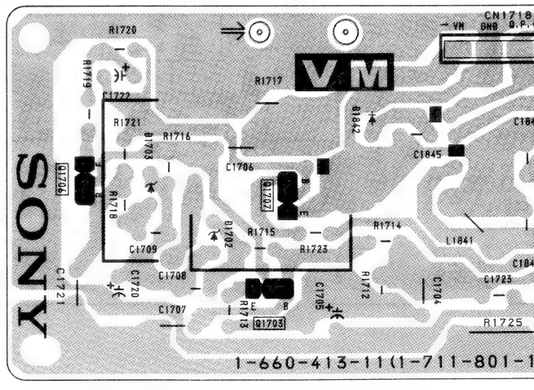




C Board

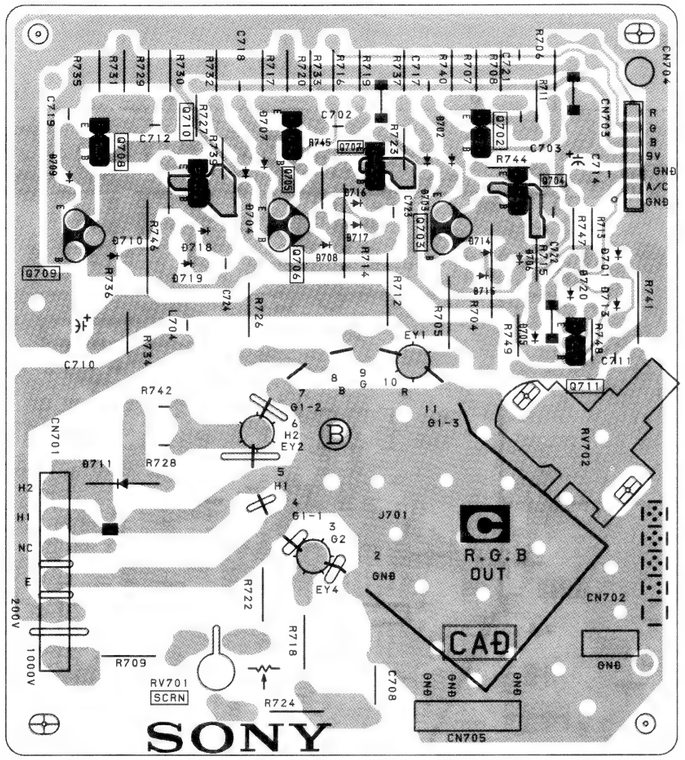


VM Board

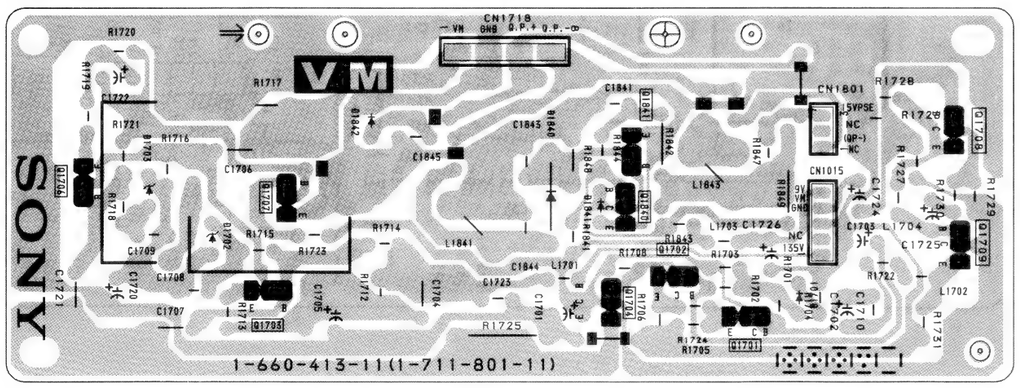


C [R, G, B OUT] VM [VM AMP]

C Board

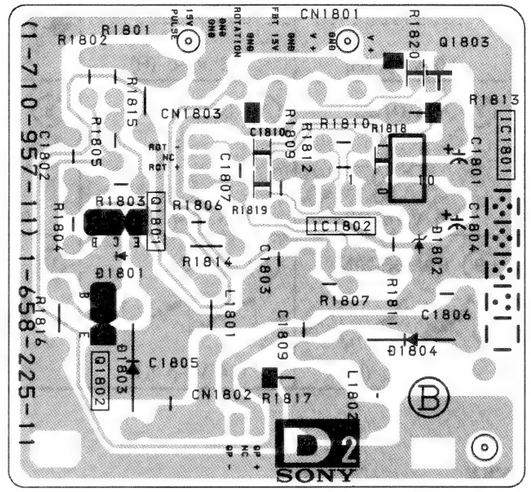


VM Board



D2 [ROTATION AMP]

D2 Board



C BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter
Q702	2.0	11.4	1.4
Q703	12.0	168.3	11.4
Q704	168.3	6.0	163.5
Q705	1.7	11.4	1.2
Q706	12.0	178.8	11.4
Q707	178.2	6.2	173.8
Q708	2.0	11.4	1.4
Q709	12.0	168.3	11.4
Q710	168.0	6.4	160.0

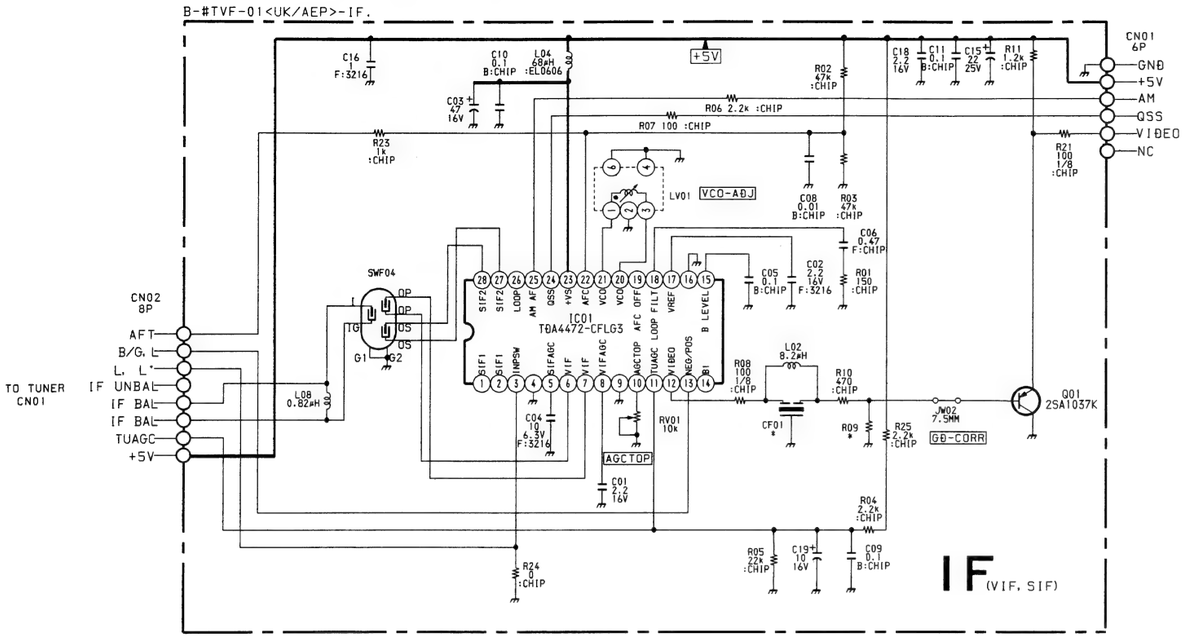
VM BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter
Q1701	2.5	8.8	1.8
Q1702	2.5	5.5	1.8
Q1703	134.3	71.8	134.8
Q1704	5.5	8.8	4.8
Q1706	1.0	71.8	0.4
Q1707	0.7	-	-
Q1708	2.9	6.6	2.2
Q1709	2.2	8.8	1.5
Q1840	0.6	-	-

D2 BOARD IC VOLTAGE TABLE

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC1802	1-2	2.8
	3	3.0
	5-6	4.4
	7	6.2
	8	9.0

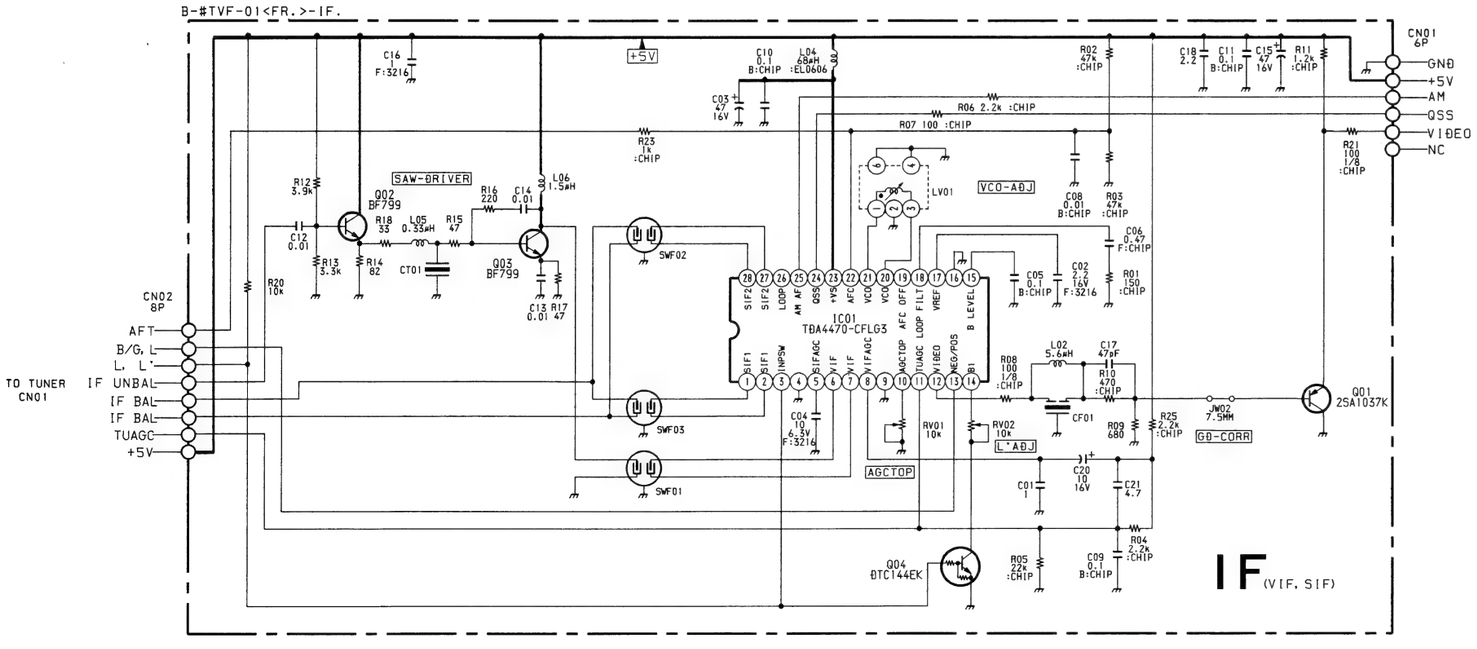
TUVIF (AEP) (KV-29X1A, 29X1D, 29X1E, 29X1K, 29X1L and 29X1R ONLY)
TUVIF (UK) (KV-29X1U ONLY)



IF Board

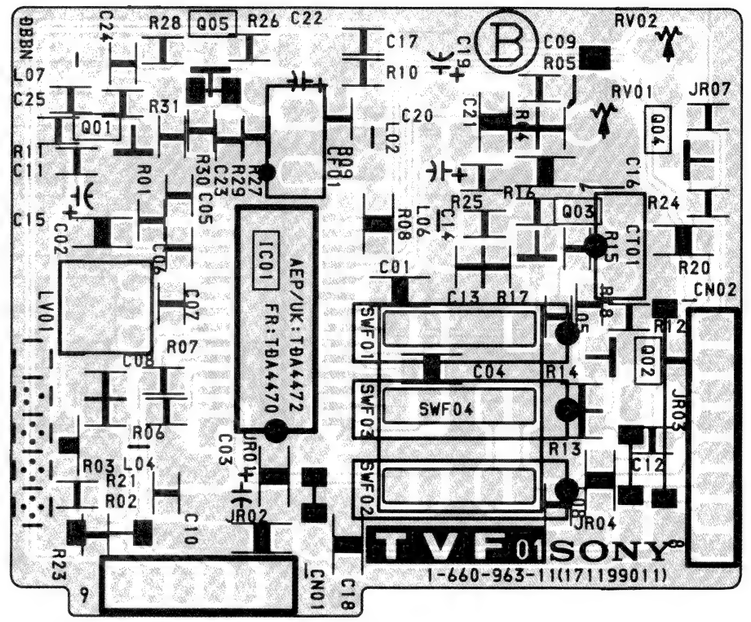
Ref. No. \ Model	29X1A	29X1D	29X1E	29X1K	29X1L	29X1R	29X1U
CF01	5.5MHz	5.5MHz	5.5MHz	5.5MHz	5.5MHz	5.5MHz	6.0MHz
R09	680MF	680MF	680MF	680MF	680MF	680MF	1K

TUVIF (FR) (KV-29X1B ONLY)

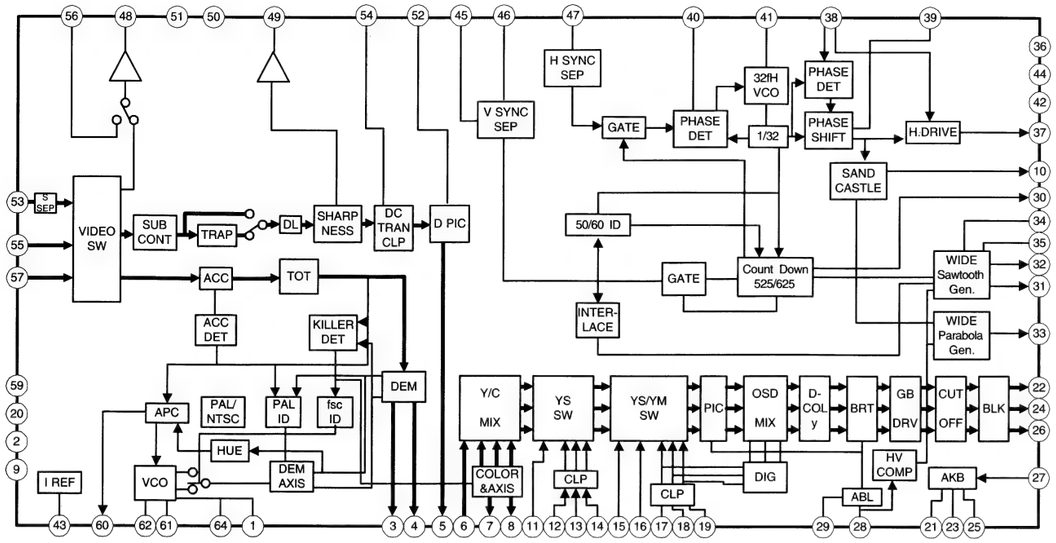


IF [VIF, SIF]

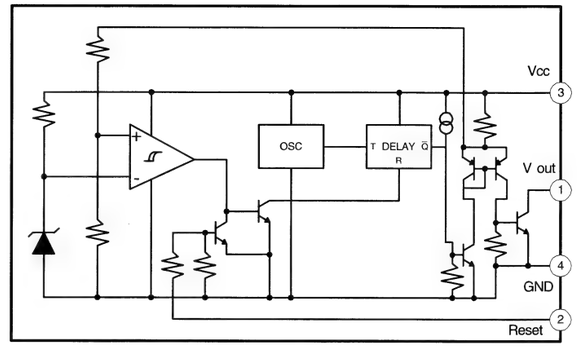
IF Board



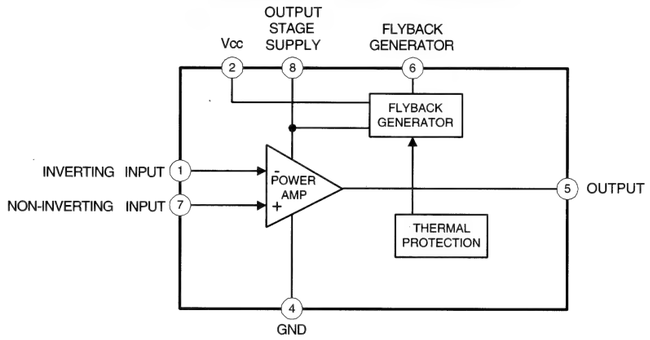
A BOARD IC301 CXA2000Q-TL



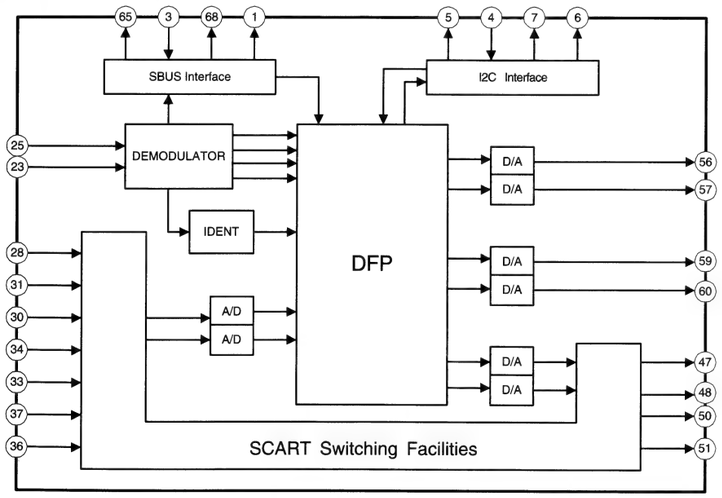
A BOARD IC4 PST593C



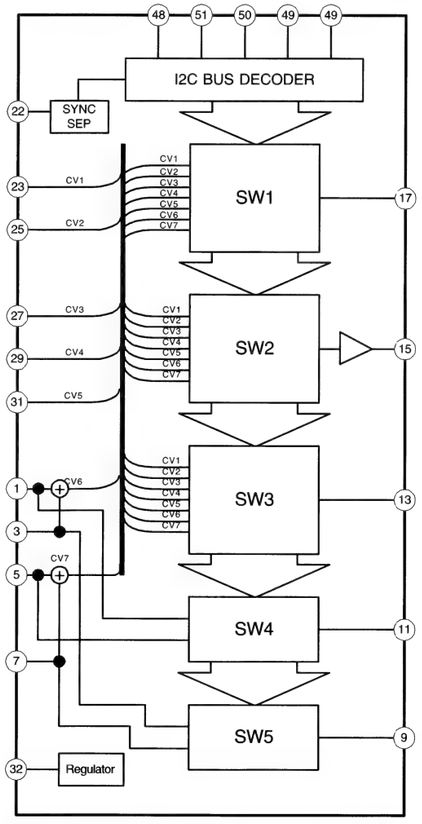
D BOARD IC500 STV9379



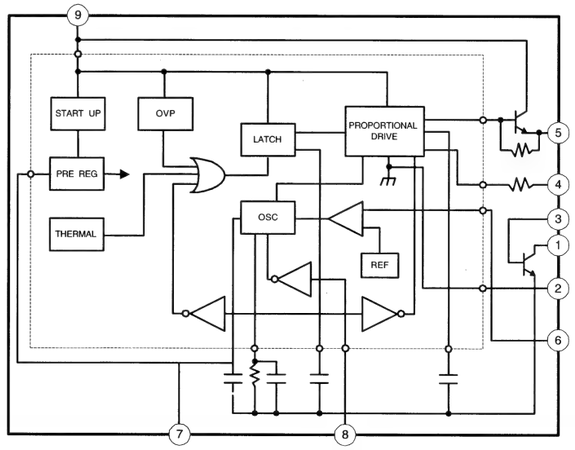
A BOARD IC202 MSP3410/MSP3400



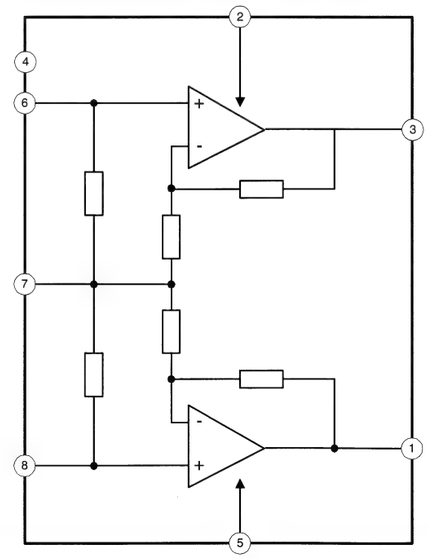
A BOARD IC201 CXA2040Q



D BOARD IC600 STR-S6708

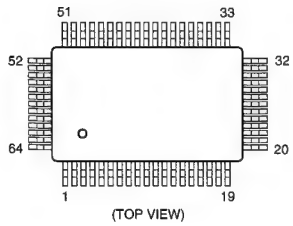


D BOARD IC1200 TDA7264



SEMICONDUCTORS

CXA2000Q-TL



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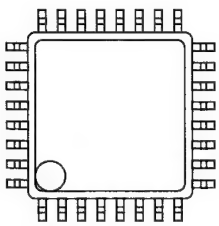

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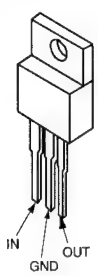

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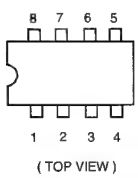
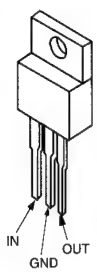
M5216P
TDA2822M
µPC393C



LM2940CT-5.0
LM2940CT
LM2940T-9.0
MCT7809CT
µPC2405HF



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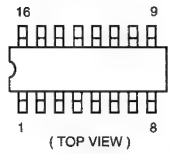

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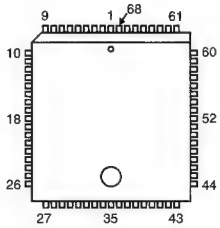
MSP3410-15



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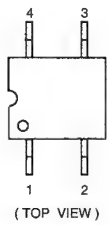

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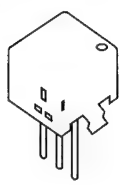

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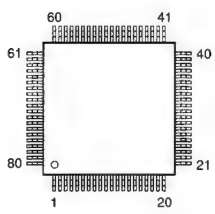

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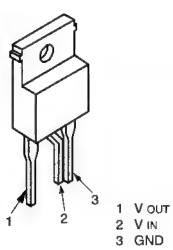

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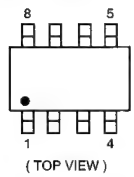
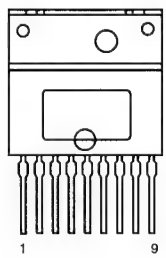


STR-S6708



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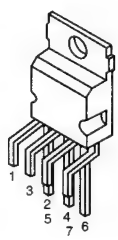

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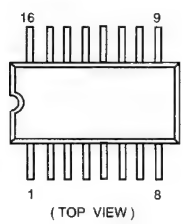

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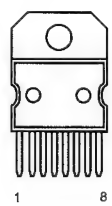
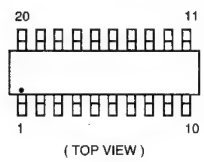
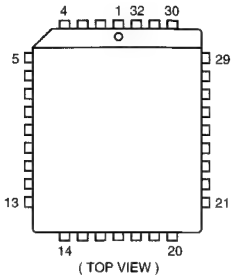


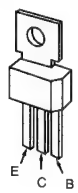
TDA8395T



TMS27PC010A-15FML

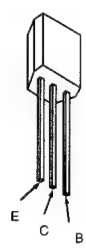


BF871-127

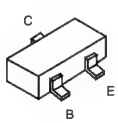


BF421L-AMMO
JA101TP-Q
2SA733-K
2SA933AS
2SA933S
2SA1091-O
2SC3502-F
2SC2808STP-R

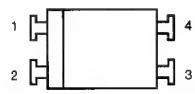
DTA144ES
DTC114ES
DTC143TS
DTC144ES
2SC1740S-RT



DTC144EK
2SA1037K
2SA1162-G
2SC2412K



TLP721(D4-)



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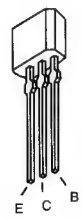

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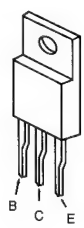
2SA1837
2SC3852A



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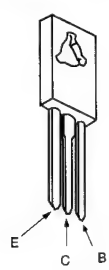

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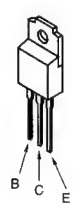

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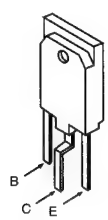
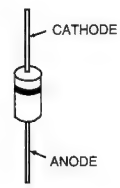
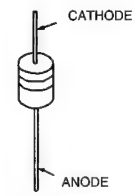


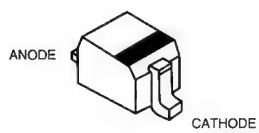
AU-01Z-V1 GP08D
EG-1Z-V1 RGP02
EGP20G RGP10GPKG23
EL1Z RGP15GPKG23
EM1-V1 RU3YX
EU-1-V1 RU4AM-T3
EU2-V1 RU4DS
FML-G12S



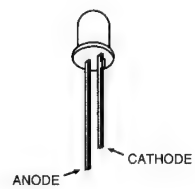
MTZJ-3.6A RD3.9ESB2
MTZJ-3.9B RD5.1ESB2
MTZJ-5.1B RD5.6ESB2
MTZJ-5.6B RD6.2ESB2
MTZJ-6.2B RD6.8ESB2
MTZJ-6.8B RD7.5ESB2
MTZJ-7.5C RD10ESB2
MTZJ-9.1 RD39ES-B2
MTZJ-T-77-9.1A
MTZJ-10 1SS133T-77
MTZJ-39



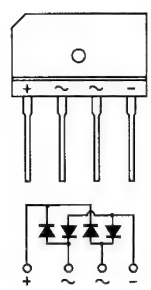
BAS216 MA8330
DTZ6.8C 1SS355
DTZ9.1 UDZ-TE-17-5.6B
DTZ33B UDZ-TE-17-9.1B



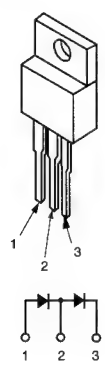
SLA-570KT3F



D4SB60L



FMS-3FU



EXPLODED VIEWS

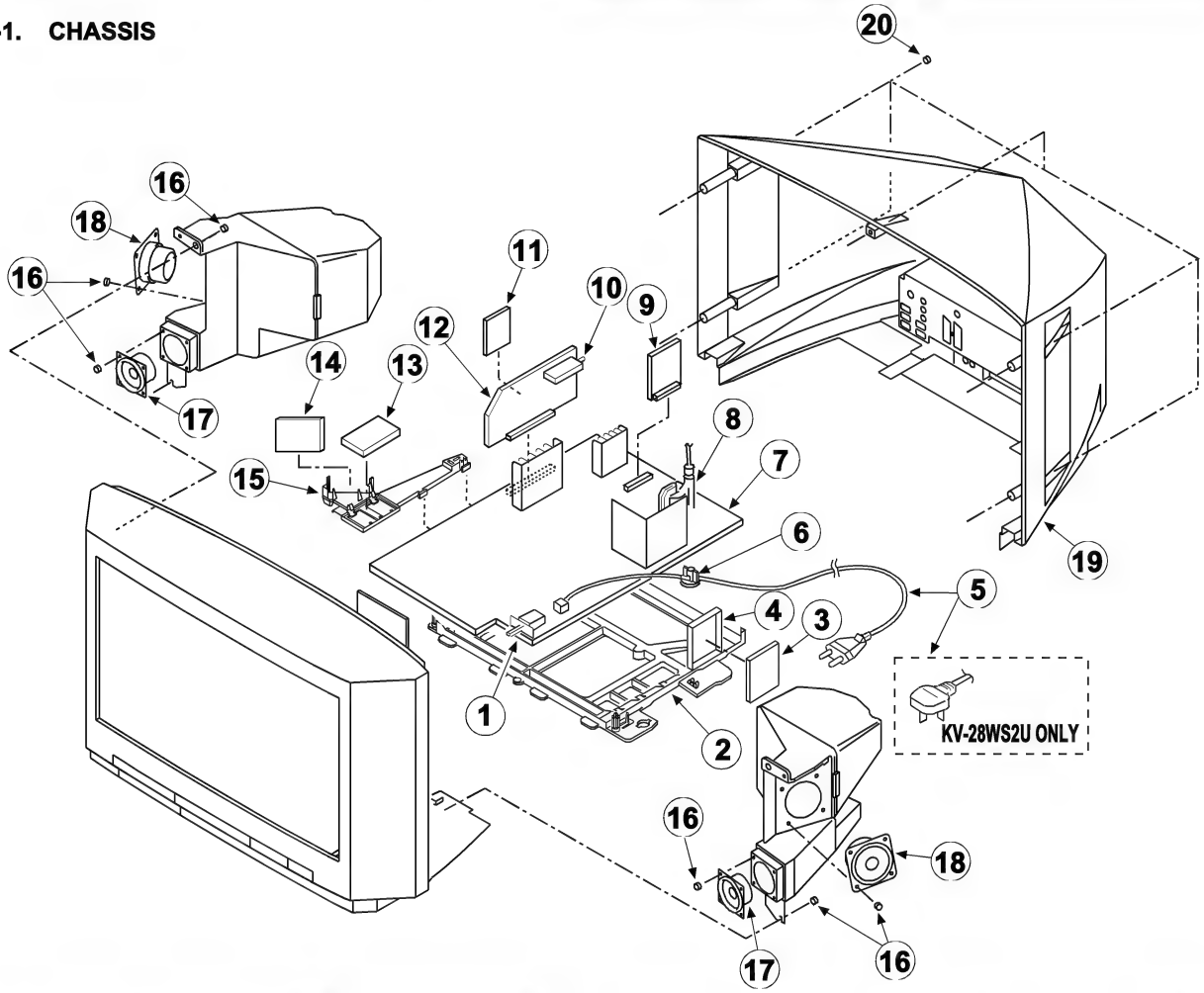
NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

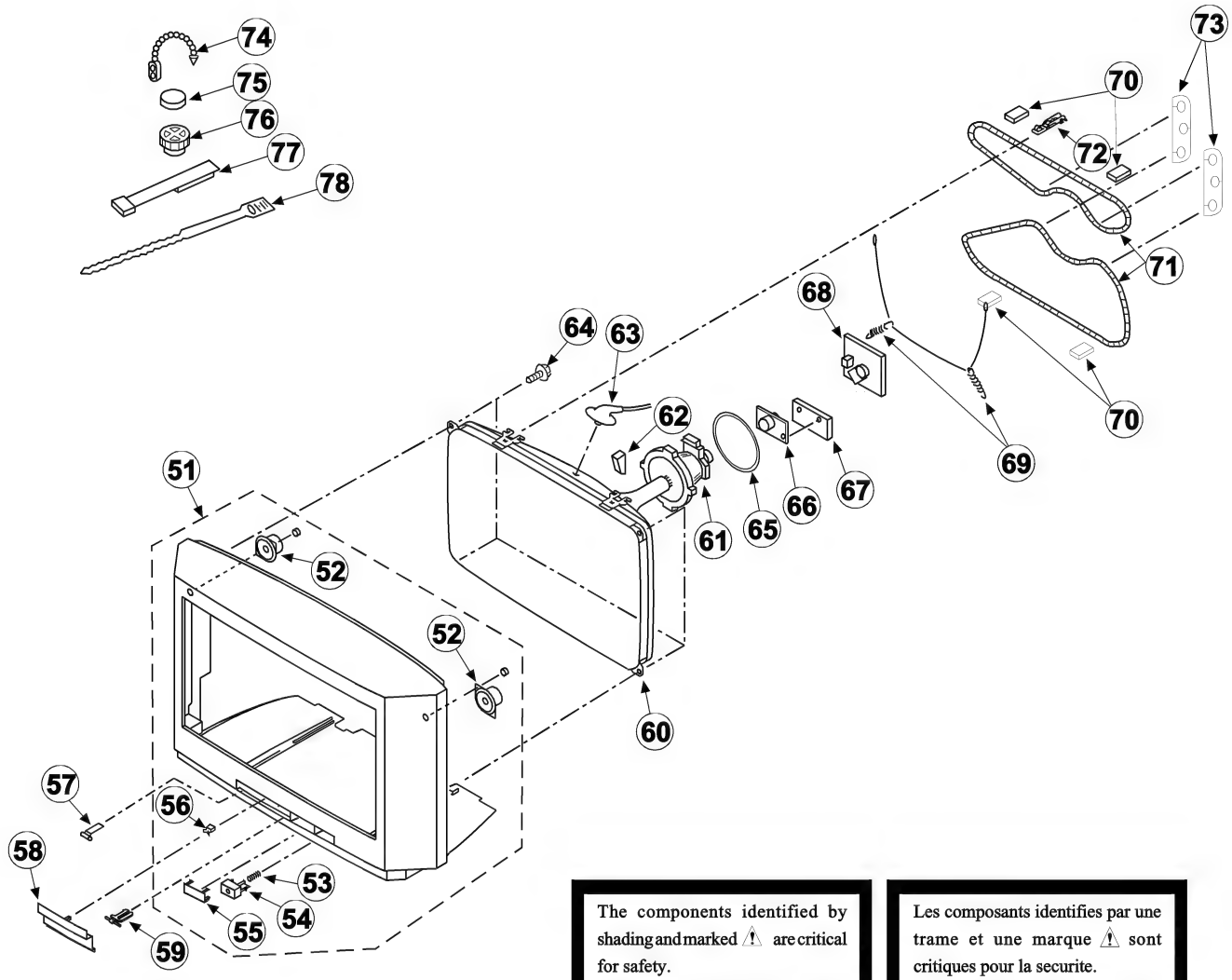
Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

6-1. CHASSIS



REF NO		PART NO	DESCRIPTION	REMARK
1	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
2		*4-203-315-01	BRACKET, MAIN	
3		*A-1640-235-A	D3 BOARD, COMPLETE	
4		*4-203-404-01	BRACKET, D3	
5	⚠	1-751-680-11	CORD, POWER (WITH NOISE FILTER) 2.5A/250V (KV-28WS2B/28WS2D/28WS2E)	
	⚠	1-690-270-21	CORD, POWER (WITH CONNECTOR) 2.5A/250V (KV-28WS2K/28WS2R)	
	⚠	1-776-204-11	CORD, POWER (FILTER) 3.0A/250V (KV-28WS2U)	
6		*4-202-531-01	AC CORD LOCK (SC)	
7		*A-1642-190-A	D BOARD, COMPLETE	
8	⚠	1-453-169-11	TRANSFORMER ASSY, FLYBACK (UX-1604A2)	
9		*A-1640-214-A	D2 BOARD, COMPLETE	
10		1-693-340-11	TUNER/VIF (FR) (KV-28WS2B)	
		1-693-338-11	TUNER/VIF (AEP) (KV-28WS2D/28WS2E/28WS2K/28WS2R)	
		1-693-339-11	TUNER/VIF (UK) (KV-28WS2U)	
11		*A-1630-529-A	A1 BOARD, COMPLETE	
12		*A-1632-516-A	A BOARD, COMPLETE (KV-28WS2B)	
		*A-1632-471-A	A BOARD, COMPLETE (KV-28WS2D)	
		*A-1632-517-A	A BOARD, COMPLETE (KV-28WS2E)	
		*A-1632-529-A	A BOARD, COMPLETE (KV-28WS2K)	
		*A-1632-530-A	A BOARD, COMPLETE (KV-28WS2R)	
		*A-1632-515-A	A BOARD, COMPLETE (KV-28WS2U)	
13		*A-1651-088-A	J BOARD, COMPLETE	
14		*A-1649-018-A	K1 BOARD, COMPLETE	
15		*4-203-537-01	BRACKET, J-K-T	
16		4-039-355-11	SCREW(4X12), (+) BV TAPPING	
17		1-505-154-11	SPEAKER (6.5CM)	
18		1-505-155-11	SPEAKER (10CM)	
19		4-203-543-01	COVER, REAR	
20		4-039-358-01	SCREW (4X16), (+) BV TAPPING	

PICTURE TUBE



The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

REF NO		PART NO	DESCRIPTION	REMARK
51		A-1603-045-A	BEZNET ASSY	52-56
52		1-504-418-21	SPEAKER (5CM)	
53		4-202-964-01	SPRING	
54		4-203-540-01	BUTTON, POWER	
55		4-203-539-01	WINDOW ORNAMENTAL	
56		4-047-464-01	CATCHER PUSH	
57		4-045-250-01	DAMPER	
58		4-203-542-01	DOOR, CONTROL	
59		4-202-555-01	SHAFT, DOOR	
60	⚠	8-737-763-05	PICTURE TUBE (SD-284T) (W66LGY011X)	
61	⚠	8-451-434-21	DEFLECTION YOKE (Y28GIA-B)	
62		3-704-495-01	SPACER, DY	
63	⚠	1-540-006-22	CAP ASSY, HIGH-VOLTAGE	
64		4-036-188-01	SCREW (M), PT	
65		1-452-724-22	COIL, NA ROTATION (RT-165)	
66	⚠	8-453-005-61	NECK ASSY PICTURE TUBE (NA297-M6)	

REF NO		PART NO	DESCRIPTION	REMARK
67		*A-1644-070-A	VM BOARD, COMPLETE	
68		*A-1638-079-A	C BOARD, COMPLETE	
69		4-369-318-31	SPRING, TENSION	
70		*4-203-390-01	CUSHION, DGC	
71	⚠	1-411-893-11	COIL DEGAUSSING	
72		4-202-463-01	CLIP, DGC (25")	
73		*4-050-252-01	SPACER, DGC	
74		4-308-870-00	CLIP, LEAD WIRE	
75		1-452-032-00	MAGNET, DISK; 10MM Ø	
76		1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
77		X-4387-214-1	PERMALLOY ASSY, CORRECTION	
78		3-701-007-00	BAND, BINDING	

SECTION 7
ELECTRICAL PARTS LIST

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors

When indicating parts by reference number, please include the board name.

CAPACITORS MF : mF, PF : mmF

COILS MMH : mH, µH : mH

RESISTORS
- All resistors are in ohms
- F : nonflammable

A1

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1630-529-A	A1 BOARD, COMPLETE **********	
		< CAPACITOR >	
C1201	1-164-695-11	CERAMIC CHIP 0.0022MF 5% 50V	
C1202	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1203	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1204	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1205	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1206	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1207	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1208	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1209	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1210	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1211	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1212	1-126-933-11	ELECT 100MF 20% 16V	
C1215	1-126-967-11	ELECT 47MF 20% 16V	
C1216	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1217	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1218	1-126-964-11	ELECT 10MF 20% 50V	
C1219	1-126-967-11	ELECT 47MF 20% 16V	
C1220	1-163-145-00	CERAMIC CHIP 0.0015MF 5% 50V	
C1221	1-163-145-00	CERAMIC CHIP 0.0015MF 5% 50V	
C1222	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1223	1-126-967-11	ELECT 47MF 20% 16V	
C1224	1-126-967-11	ELECT 47MF 20% 16V	
C1225	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1226	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1227	1-126-964-11	ELECT 10MF 20% 50V	
C1228	1-163-145-00	CERAMIC CHIP 0.0015MF 5% 50V	
C1229	1-163-145-00	CERAMIC CHIP 0.0015MF 5% 50V	
C1230	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1231	1-126-967-11	ELECT 47MF 20% 16V	
C1232	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1233	1-126-967-11	ELECT 47MF 20% 16V	
C1236	1-126-967-11	ELECT 47MF 20% 16V	
C1237	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C1238	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
		< CONNECTOR >	
CN1202	1-766-929-11	CONNECTOR, BOARD TO BOARD 8P	
CN1203	1-766-929-11	CONNECTOR, BOARD TO BOARD 8P	
CN1204	*1-564-519-11	PLUG, CONNECTOR 4P	
		< DIODE >	
D1201	8-719-988-62	DIODE 1SS355	
		< IC >	
IC1201	8-759-377-62	IC DSP56004-FJ66R2	
IC1202	8-759-349-93	IC KM62256CLG-7	
IC1203	8-759-384-64	IC TDA1387T/N1/T3	
IC1204	8-759-384-64	IC TDA1387T/N1/T3	
IC1205	8-759-387-76	IC TL072CDR	
IC1206	8-759-387-76	IC TL072CDR	
IC1207	8-759-991-41	IC L78L05ACZ	
		< COIL >	
L1204	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1205	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1206	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1207	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1208	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1209	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1210	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1211	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1212	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1213	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1220	1-410-989-11	INDUCTOR CHIP 0.47UH	
L1221	1-410-989-11	INDUCTOR CHIP 0.47UH	
		< TRANSISTOR >	
Q1201	8-729-902-99	TRANSISTOR DTC114TK	
		< RESISTOR >	
R1202	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1204	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1205	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R1206	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R1207	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1208	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1209	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1210	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1211	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1212	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1213	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R1214	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1215	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R1220	1-216-001-00	METAL GLAZE 10 5% 1/10W	

A1 A

REF.NO.	PART NO.	DESCRIPTION			REMARK
R1221	1-216-065-00	METAL GLAZE	4.7K	5% 1/10W	
R1222	1-216-065-00	METAL GLAZE	4.7K	5% 1/10W	
R1223	1-216-063-91	METAL GLAZE	3.9K	5% 1/10W	
R1224	1-216-061-00	METAL GLAZE	3.3K	5% 1/10W	
R1225	1-216-025-00	METAL GLAZE	100	5% 1/10W	
R1226	1-216-061-00	METAL GLAZE	3.3K	5% 1/10W	
R1227	1-216-063-91	METAL GLAZE	3.9K	5% 1/10W	
R1228	1-216-025-00	METAL GLAZE	100	5% 1/10W	
R1229	1-216-001-00	METAL GLAZE	10	5% 1/10W	
R1230	1-216-063-91	METAL GLAZE	3.9K	5% 1/10W	
R1231	1-216-061-00	METAL GLAZE	3.3K	5% 1/10W	
R1232	1-216-025-00	METAL GLAZE	100	5% 1/10W	
R1233	1-216-061-00	METAL GLAZE	3.3K	5% 1/10W	
R1234	1-216-063-91	METAL GLAZE	3.9K	5% 1/10W	
R1235	1-216-025-00	METAL GLAZE	100	5% 1/10W	
R1236	1-216-025-00	METAL GLAZE	100	5% 1/10W	
R1237	1-216-025-00	METAL GLAZE	100	5% 1/10W	
R1238	1-216-025-00	METAL GLAZE	100	5% 1/10W	
R1239	1-216-025-00	METAL GLAZE	100	5% 1/10W	

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*A-1632-516-A	A BOARD, COMPLETE (KV-28WS2B)		
	**********		
*A-1632-471-A	A BOARD, COMPLETE (KV-28WS2D)		
	**********		
*A-1632-517-A	A BOARD, COMPLETE (KV-28WS2E)		
	**********		
*A-1632-529-A	A BOARD, COMPLETE (KV-28WS2K)		
	**********		
*A-1632-530-A	A BOARD, COMPLETE (KV-28WS2R)		
	**********		
*A-1632-515-A	A BOARD, COMPLETE (KV-28WS2U)		
	**********		
1-750-797-11	SOCKET, PLCC		

< CAPACITOR >

C1	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C2	1-126-965-11	ELECT	22MF	20%	50V
C3	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C4	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C8	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C10	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C11	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C14	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C15	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C18	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C20	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C21	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C22	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C43	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C45	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C80	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C81	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C82	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C90	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C101	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C102	1-126-934-11	ELECT	220MF	20%	16V
C103	1-126-965-11	ELECT	22MF	20%	50V
C104	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C110	1-126-967-11	ELECT	47MF	20%	16V
C112	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C113	1-126-967-11	ELECT	47MF	20%	16V
C115	1-102-112-00	CERAMIC	330PF	10%	50V (KV-28WS2B)
C120	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C121	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C122	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C123	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C124	1-137-399-11	FILM	0.1MF	5%	50V
C201	1-163-139-00	CERAMIC CHIP	820PF	10%	50V
C202	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C203	1-126-933-11	ELECT	100MF	20%	16V
C204	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C205	1-126-965-11	ELECT	22MF	20%	50V
C206	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C207	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C208	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C209	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C210	1-216-295-00	METAL GLAZE	0	5% 1/10W	
C211	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C212	1-164-346-11	CERAMIC CHIP	1MF		16V
C213	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C214	1-164-346-11	CERAMIC CHIP	1MF		16V
C215	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C216	1-126-967-11	ELECT	47MF	20%	16V
C217	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C218	1-126-967-11	ELECT	47MF	20%	16V
C219	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C220	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C221	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C222	1-164-346-11	CERAMIC CHIP	1MF		16V
C223	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C224	1-164-346-11	CERAMIC CHIP	1MF		16V
C225	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C226	1-126-967-11	ELECT	47MF	20%	16V
C227	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C228	1-126-967-11	ELECT	47MF	20%	16V
C229	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C230	1-216-295-00	METAL GLAZE	0	5% 1/10W	
C231	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C232	1-126-967-11	ELECT	47MF	20%	16V
C251	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C252	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C253	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C254	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C255	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C256	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C257	1-126-965-11	ELECT	22MF	20%	50V
C258	1-126-964-11	ELECT	10MF	20%	50V
C259	1-164-336-11	CERAMIC CHIP	0.33MF		25V
C260	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C261	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C262	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C263	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C264	1-126-962-11	ELECT	3.3MF	20%	50V
C265	1-126-964-11	ELECT	10MF	20%	50V
C266	1-126-964-11	ELECT	10MF	20%	50V
C267	1-126-965-11	ELECT	22MF	20%	50V
C268	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C269	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C270	1-163-131-00	CERAMIC CHIP	390PF	5%	50V

REF.NO.	PART NO.	DESCRIPTION			REMARK
C271	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C272	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C273	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C274	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C275	1-164-346-11	CERAMIC CHIP 1MF		16V	
C276	1-164-346-11	CERAMIC CHIP 1MF		16V	
C277	1-164-346-11	CERAMIC CHIP 1MF		16V	
C278	1-164-346-11	CERAMIC CHIP 1MF		16V	
C279	1-126-965-11	ELECT 22MF	20%	50V	
C280	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C281	1-126-965-11	ELECT 22MF	20%	50V	
C282	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C300	1-163-109-00	CERAMIC CHIP 47PF	5%	50V	
C301	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C302	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C303	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C304	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C305	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C306	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C307	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C308	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C309	1-164-346-11	CERAMIC CHIP 1MF		16V	
C310	1-164-346-11	CERAMIC CHIP 1MF		16V	
C311	1-164-346-11	CERAMIC CHIP 1MF		16V	
C312	1-164-505-11	CERAMIC CHIP 2.2MF		16V	
C313	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C315	1-216-295-00	METAL GLAZE 0	5%	1/10W	
C317	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C319	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C320	1-126-965-11	ELECT 22MF	20%	50V	
C321	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C322	1-163-037-11	CERAMIC CHIP 0.22MF	10%	50V	
C323	1-163-037-11	CERAMIC CHIP 0.22MF	10%	50V	
C324	1-163-037-11	CERAMIC CHIP 0.22MF	10%	50V	
C325	1-164-346-11	CERAMIC CHIP 1MF		16V	
C326	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C327	1-137-374-11	FILM 0.047MF	5%	50V	
C328	1-126-964-11	ELECT 10MF	20%	50V	
C329	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C330	1-130-777-00	FILM 0.1MF	5%	63V	
C331	1-137-581-11	FILM 0.1MF	5%	100V	
C332	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C333	1-126-933-11	ELECT 100MF	20%	16V	
C334	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C335	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V	
C336	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C337	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V	
C338	1-164-346-11	CERAMIC CHIP 1MF		16V	
C339	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C340	1-126-933-11	ELECT 100MF	20%	16V	
C341	1-164-005-11	CERAMIC CHIP 0.47MF		25V	
C342	1-164-346-11	CERAMIC CHIP 1MF		16V	
C343	1-163-017-00	CERAMIC CHIP 0.0047MF	10%	50V	
C344	1-163-117-00	CERAMIC CHIP 100PF	5%	50V	
C347	1-164-005-11	CERAMIC CHIP 0.47MF		25V	
C348	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C350	1-126-964-11	ELECT 10MF	20%	50V	
C351	1-164-505-11	CERAMIC CHIP 2.2MF		16V	
C352	1-164-005-11	CERAMIC CHIP 0.47MF		25V	
C353	1-164-505-11	CERAMIC CHIP 2.2MF		16V	
C354	1-164-005-11	CERAMIC CHIP 0.47MF		25V	
C355	1-126-965-11	ELECT 22MF	20%	50V	
C356	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V	
C357	1-163-133-00	CERAMIC CHIP 470PF	5%	50V	
C358	1-164-005-11	CERAMIC CHIP 0.47MF		25V	
C359	1-163-231-11	CERAMIC CHIP 15PF	5%	50V	
C360	1-163-231-11	CERAMIC CHIP 15PF	5%	50V	
C370	1-164-505-11	CERAMIC CHIP 2.2MF		16V	(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)
C371	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V	
C372	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V	(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)
C373	1-164-489-11	CERAMIC CHIP 0.22MF	10%	16V	(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)
C1001	1-163-235-11	CERAMIC CHIP 22PF	5%	50V	
C1002	1-163-235-11	CERAMIC CHIP 22PF	5%	50V	
C1010	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C1013	1-126-965-11	ELECT 22MF	20%	50V	
C1014	1-163-038-00	CERAMIC CHIP 0.1MF		25V	
C1015	1-164-489-11	CERAMIC CHIP 0.22MF	10%	16V	
C1020	1-163-101-00	CERAMIC CHIP 22PF	5%	50V	
		< FILTER >			
CF120	1-409-327-00	TRAP, CERAMIC (6.5MHz) (KV-28WS2B)			
		< CONNECTOR >			
CN1	1-695-302-11	CONNECTOR, BOARD TO BOARD 50P			
CN2	*1-568-880-51	PIN, CONNECTOR 5P			
CN4	1-568-878-51	PIN, CONNECTOR 3P			
CN201	1-766-296-11	CONNECTOR, DUAL SCART			
CN202	1-766-928-11	CONNECTOR, BOARD TO BOARD 8P			
CN203	1-766-928-11	CONNECTOR, BOARD TO BOARD 8P			
CN301	*1-568-882-51	PIN, CONNECTOR 7P			
		< DIODE >			
D2	8-719-988-62	DIODE 1SS355			
D10	8-719-158-15	DIODE RD5.6S-B			
D11	8-719-158-15	DIODE RD5.6S-B			
D12	8-719-158-15	DIODE RD5.6S-B			
D101	8-719-977-81	DIODE DTZ33B			
D201	8-719-977-22	DIODE DTZ9.1			
D202	8-719-977-22	DIODE DTZ9.1			
D203	8-719-977-22	DIODE DTZ9.1			
D204	8-719-977-22	DIODE DTZ9.1			
D205	8-719-977-22	DIODE DTZ9.1			
D206	8-719-977-22	DIODE DTZ9.1			
D207	8-719-977-22	DIODE DTZ9.1			
D208	8-719-977-22	DIODE DTZ9.1			
D209	8-719-977-22	DIODE DTZ9.1			
D210	8-719-977-22	DIODE DTZ9.1			
D211	8-719-977-22	DIODE DTZ9.1			
D212	8-719-977-22	DIODE DTZ9.1			
D213	8-719-977-22	DIODE DTZ9.1			
D214	8-719-977-22	DIODE DTZ9.1			
D215	8-719-977-22	DIODE DTZ9.1			
D216	8-719-158-15	DIODE RD5.6S-B			
D217	8-719-158-15	DIODE RD5.6S-B			
D218	8-719-158-15	DIODE RD5.6S-B			
D220	8-719-988-62	DIODE 1SS355			
D221	8-719-988-62	DIODE 1SS355			

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REF.NO.	PART NO.	DESCRIPTION	REMARK
D222	8-719-977-22	DIODE DTZ9.1	
D223	8-719-977-22	DIODE DTZ9.1	
D224	8-719-977-22	DIODE DTZ9.1	
D225	8-719-977-22	DIODE DTZ9.1	
D226	8-719-977-22	DIODE DTZ9.1	
D227	8-719-977-13	DIODE DTZ-6.8C	
D251	8-719-047-16	DIODE BAS216	
D320	8-719-977-22	DIODE DTZ9.1	
D370	8-719-047-16	DIODE BAS216	(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)
D1010	8-719-036-58	DIODE MA3030-H(TX)	
		< LINE FILTER >	
FL101	1-236-071-11	ENCAPSULATED COMPONENT	
FL201	1-236-071-11	ENCAPSULATED COMPONENT	
FL202	1-236-071-11	ENCAPSULATED COMPONENT	
FL203	1-236-071-11	ENCAPSULATED COMPONENT	
FL1001	1-236-071-11	ENCAPSULATED COMPONENT	
		< IC >	
IC1	8-759-376-75	IC SDA5250M-C5-GEG	
IC2	8-759-334-20	IC ST24E32M6TR	
IC3	8-759-353-82	IC TMS27PC020-15FML	
IC4	8-759-394-57	IC PST593C-MMP-4P	
IC201	8-752-076-06	IC CXA2040Q-T4	
IC202	8-759-376-80	IC MSP3410B-PS-F7-T	(KV-28WS2B/28WS2E/28WS2U)
	8-759-376-56	IC MSP3400C-PS-C6-T	(KV-28WS2D/28WS2K/28WS2R)
IC203	8-759-385-76	IC MC14052BDR2	
IC301	8-752-076-09	IC CXA2000Q-TL	
IC302	8-759-288-85	IC TDA4665T-T	
IC303	8-759-251-56	IC TDA8395T/N3	(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)
IC1001	8-759-376-76	IC SDA5273CP-GEG	
		< COIL >	
L10	1-410-379-31	INDUCTOR CHIP 6.8UH	
L102	1-408-406-00	INDUCTOR 5.6UH	(KV-28WS2B)
L111	1-410-993-11	INDUCTOR CHIP 1UH	
L120	1-408-408-00	INDUCTOR 8.2UH	
L121	1-408-397-00	INDUCTOR 1UH	
L122	1-408-408-00	INDUCTOR 8.2UH	
L300	1-408-607-31	INDUCTOR 2.2UH	
		< TRANSISTOR >	
Q1	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q4	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q15	8-729-216-22	TRANSISTOR 2SA1162-G	
Q17	8-729-216-22	TRANSISTOR 2SA1162-G	
Q80	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q81	8-729-216-22	TRANSISTOR 2SA1162-G	
Q110	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q111	8-729-216-22	TRANSISTOR 2SA1162-G	
Q112	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q113	8-729-216-22	TRANSISTOR 2SA1162-G	
Q114	8-729-216-22	TRANSISTOR 2SA1162-G	
Q120	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q121	8-729-920-74	TRANSISTOR 2SC2412K-QR	(KV-28WS2B)
Q122	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q124	8-729-920-74	TRANSISTOR 2SC2412K-QR	(KV-28WS2B)
Q130	8-729-216-22	TRANSISTOR 2SA1162-G	(KV-28WS2B)
Q201	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q202	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q205	8-729-901-01	TRANSISTOR DTC144EK	
Q206	8-729-216-22	TRANSISTOR 2SA1162-G	
Q207	8-729-216-22	TRANSISTOR 2SA1162-G	
Q300	8-729-901-01	TRANSISTOR DTC144EK	
Q304	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q305	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q306	8-729-901-01	TRANSISTOR DTC144EK	
Q330	8-729-216-22	TRANSISTOR 2SA1162-G	
Q331	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q332	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q1001	8-729-901-01	TRANSISTOR DTC144EK	
Q1002	8-729-216-22	TRANSISTOR 2SA1162-G	
		< RESISTOR >	
JR101	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR201	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR204	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR205	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR206	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR207	1-216-295-00	METAL GLAZE 0 5% 1/10W	
JR304	1-216-296-91	METAL GLAZE 0 5% 1/8W	
JR305	1-216-296-91	METAL GLAZE 0 5% 1/8W	
R1	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R2	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R3	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R4	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R5	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R7	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R8	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R9	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R10	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R11	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R12	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R18	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R19	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R20	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R21	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R24	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R25	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R28	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R29	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R30	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R31	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R32	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R33	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R34	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R35	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R36	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R37	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R38	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R39	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R40	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W	
R42	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R44	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R46	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
R47	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R48	1-216-121-91	METAL GLAZE 1M 5% 1/10W	

REF.NO.	PART NO.	DESCRIPTION	REMARK
R49	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R50	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R51	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R52	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R53	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R54	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R58	1-216-063-91	METAL GLAZE 3.9K 5% 1/10W	
R59	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R60	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R61	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R62	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R63	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R64	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R65	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R66	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R67	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R69	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R70	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R71	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R72	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R73	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R74	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R75	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R76	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R77	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R78	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R79	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R80	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R81	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R82	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R83	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R84	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R85	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R86	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R87	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R88	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R91	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R92	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R93	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R94	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R95	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R97	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R98	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R101	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R102	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R103	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R104	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R105	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R106	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R110	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R111	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R112	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R113	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R114	1-216-029-00	METAL GLAZE 150 5% 1/10W	
R115	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R116	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R117	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	(KV-28WS2B/28WS2D/28WS2E/28WS2K/28WS2R)
	1-216-056-00	METAL GLAZE 2.0K 5% 1/10W	(KV-28WS2U)

REF.NO.	PART NO.	DESCRIPTION	REMARK
R118	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R119	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R120	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R121	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R122	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R123	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R124	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R125	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R126	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R127	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R128	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R129	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R130	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R131	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R132	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R133	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R134	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R135	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R136	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R137	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R138	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R200	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R201	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R202	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R203	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R204	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R205	1-216-689-11	METAL GLAZE 39K 5% 1/10W	
R206	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R208	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R209	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R210	1-216-017-91	METAL GLAZE 47 5% 1/10W	
R211	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R212	1-216-022-00	METAL GLAZE 75 5% 1/10W	
R213	1-216-022-00	METAL GLAZE 75 5% 1/10W	
R214	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R216	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R217	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R218	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R219	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R220	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R221	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R222	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R223	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R224	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R225	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R226	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R227	1-216-022-00	METAL GLAZE 75 5% 1/10W	
R228	1-216-022-00	METAL GLAZE 75 5% 1/10W	
R229	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R230	1-216-022-00	METAL GLAZE 75 5% 1/10W	
R232	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R233	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R234	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R235	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R236	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R237	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R238	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R239	1-216-039-00	METAL GLAZE 390 5% 1/10W	
R240	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R241	1-216-089-00	METAL GLAZE 47K 5% 1/10W	

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REF.NO.	PART NO.	DESCRIPTION			REMARK
R242	1-216-039-00	METAL GLAZE	390	5%	1/10W
R243	1-216-033-00	METAL GLAZE	220	5%	1/10W
R244	1-216-033-00	METAL GLAZE	220	5%	1/10W
R245	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R246	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R247	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R249	1-216-001-00	METAL GLAZE	10	5%	1/10W
R251	1-216-025-00	METAL GLAZE	100	5%	1/10W
R252	1-216-025-00	METAL GLAZE	100	5%	1/10W
R253	1-216-025-00	METAL GLAZE	100	5%	1/10W
R254	1-216-025-00	METAL GLAZE	100	5%	1/10W
R255	1-216-025-00	METAL GLAZE	100	5%	1/10W
R256	1-216-025-00	METAL GLAZE	100	5%	1/10W
R270	1-216-022-00	METAL GLAZE	75	5%	1/10W
R271	1-216-022-00	METAL GLAZE	75	5%	1/10W
R272	1-216-022-00	METAL GLAZE	75	5%	1/10W
R273	1-216-022-00	METAL GLAZE	75	5%	1/10W
R280	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R281	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R282	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R284	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R285	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R300	1-216-025-00	METAL GLAZE	100	5%	1/10W
R301	1-216-033-00	METAL GLAZE	220	5%	1/10W
R302	1-216-295-00	METAL GLAZE	0	5%	1/10W
R303	1-216-295-00	METAL GLAZE	0	5%	1/10W
R308	1-216-025-00	METAL GLAZE	100	5%	1/10W
R309	1-216-033-00	METAL GLAZE	220	5%	1/10W
R310	1-216-033-00	METAL GLAZE	220	5%	1/10W
R311	1-216-295-00	METAL GLAZE	0	5%	1/10W
R312	1-216-295-00	METAL GLAZE	0	5%	1/10W
R313	1-216-295-00	METAL GLAZE	0	5%	1/10W
R314	1-216-295-00	METAL GLAZE	0	5%	1/10W
R315	1-216-295-00	METAL GLAZE	0	5%	1/10W
R316	1-216-033-00	METAL GLAZE	220	5%	1/10W
R318	1-216-689-11	METAL GLAZE	39K	5%	1/10W
R319	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R320	1-216-025-00	METAL GLAZE	100	5%	1/10W
R321	1-216-025-00	METAL GLAZE	100	5%	1/10W
R322	1-216-025-00	METAL GLAZE	100	5%	1/10W
R323	1-216-033-00	METAL GLAZE	220	5%	1/10W
R324	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R326	1-216-025-00	METAL GLAZE	100	5%	1/10W
R327	1-216-025-00	METAL GLAZE	100	5%	1/10W
R328	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W
R329	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R330	1-216-025-00	METAL GLAZE	100	5%	1/10W
R331	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R332	1-216-025-00	METAL GLAZE	100	5%	1/10W
R333	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R334	1-216-041-00	METAL GLAZE	470	5%	1/10W
R335	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R336	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R337	1-216-025-00	METAL GLAZE	100	5%	1/10W
R338	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R339	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R340	1-216-025-00	METAL GLAZE	100	5%	1/10W
R341	1-216-025-00	METAL GLAZE	100	5%	1/10W
R342	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R343	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W

REF.NO.	PART NO.	DESCRIPTION			REMARK
R344	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R345	1-216-025-00	METAL GLAZE	100	5%	1/10W
R346	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R347	1-216-025-00	METAL GLAZE	100	5%	1/10W
R348	1-216-025-00	METAL GLAZE	100	5%	1/10W
R349	1-216-025-00	METAL GLAZE	100	5%	1/10W
R350	1-216-042-00	METAL GLAZE	510	5%	1/10W
R351	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R352	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R353	1-216-033-00	METAL GLAZE	220	5%	1/10W
R354	1-216-295-00	METAL GLAZE	0	5%	1/10W
R357	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R370	1-216-295-00	METAL GLAZE	0	5%	1/10W
R1001	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1002	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1010	1-216-295-00	METAL GLAZE	0	5%	1/10W
R1012	1-216-041-00	METAL GLAZE	470	5%	1/10W
R1014	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R1020	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R1021	1-216-029-00	METAL GLAZE	150	5%	1/10W
R1022	1-216-029-00	METAL GLAZE	150	5%	1/10W
R1023	1-216-029-00	METAL GLAZE	150	5%	1/10W
R1024	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1026	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1027	1-216-025-00	METAL GLAZE	100	5%	1/10W
R1028	1-216-025-00	METAL GLAZE	100	5%	1/10W

< TUNER >

TU101	1-693-338-11	TUNER/VIF (AEP) (KV-28WS2D/28WS2E/28WS2K/28WS2R)
	1-693-340-11	TUNER/VIF (FR) (KV-28WS2E)
	1-693-339-11	TUNER/VIF (UK) (KV-28WS2U)

< CRYSTAL >

X1	1-767-154-21	VIBRATOR, CERAMIC
X201	1-760-628-11	VIBRATOR, CRYSTAL 18.432MHz
X301	1-567-504-11	OSCILLATOR, CRYSTAL
X302	1-567-505-11	OSCILLATOR, CRYSTAL
X303	1-767-127-11	VIBRATOR, CERAMIC
X1001	1-579-965-21	VIBRATOR, CRYSTAL

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*A-1638-079-A	C BOARD, COMPLETE	
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< CAPACITOR >

C702	1-102-115-00	CERAMIC	560PF	10%	50V
C703	1-102-116-00	CERAMIC	680PF	10%	50V
C708	1-162-114-00	CERAMIC	0.0047MF		2KV
C710	1-107-652-11	ELECT	10MF	20%	250V
C712	1-102-116-00	CERAMIC	680PF	10%	50V
C714	1-126-967-11	ELECT	47MF	20%	16V
C717	1-102-114-00	CERAMIC	470PF	10%	50V
C718	1-102-114-00	CERAMIC	470PF	10%	50V
C719	1-102-114-00	CERAMIC	470PF	10%	50V
C722	1-101-880-00	CERAMIC	47PF	5%	50V
C723	1-101-880-00	CERAMIC	47PF	5%	50V
C724	1-101-880-00	CERAMIC	47PF	5%	50V

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

C D2 D3

REF.NO.	PART NO.	DESCRIPTION	REMARK
		< CONNECTOR >	
CN701	1-778-037-11	PIN, CONNECTOR (5MM PITCH) 6P	
CN702	1-695-915-11	TAB (CONTACT)	
CN703	*1-568-882-51	PIN, CONNECTOR 7P	
		< DIODE >	
D701	8-719-109-72	DIODE RD3.9ES-B2	
D702	8-719-991-33	DIODE 1SS133T-77	
D706	8-719-991-33	DIODE 1SS133T-77	
D707	8-719-991-33	DIODE 1SS133T-77	
D708	8-719-991-33	DIODE 1SS133T-77	
D709	8-719-991-33	DIODE 1SS133T-77	
D710	8-719-991-33	DIODE 1SS133T-77	
D711	8-719-302-43	DIODE EL1Z	
D714	8-719-991-33	DIODE 1SS133T-77	
D715	8-719-991-33	DIODE 1SS133T-77	
D716	8-719-991-33	DIODE 1SS133T-77	
D717	8-719-991-33	DIODE 1SS133T-77	
D718	8-719-991-33	DIODE 1SS133T-77	
D719	8-719-991-33	DIODE 1SS133T-77	
D720	8-719-991-33	DIODE 1SS133T-77	
		< CRT SOCKET >	
J701	⚠ 1-526-990-22	SOCKET, CRT	
		< COIL >	
L704	1-408-609-41	INDUCTOR 33UH	
		< TRANSISTOR >	
Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q703	8-729-906-70	TRANSISTOR BF871-127	
Q704	8-729-200-17	TRANSISTOR 2SA1091-O	
Q705	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q706	8-729-906-70	TRANSISTOR BF871-127	
Q707	8-729-200-17	TRANSISTOR 2SA1091-O	
Q708	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q709	8-729-906-70	TRANSISTOR BF871-127	
Q710	8-729-200-17	TRANSISTOR 2SA1091-O	
Q711	8-729-026-41	TRANSISTOR 2SA933AS-QRT	
		< RESISTOR >	
R704	1-216-486-00	METAL OXIDE 8.2K 5% 3W F	
R705	1-260-103-11	CARBON 2.2K 5% 1/2W	
R706	1-247-815-91	CARBON 220 5% 1/4W	
R707	1-249-408-11	CARBON 180 5% 1/4W	
R709	1-202-844-00	SOLID 330K 10% 1/2W	
R711	1-249-423-11	CARBON 3.3K 5% 1/4W	
R712	1-260-103-11	CARBON 2.2K 5% 1/2W	
R714	1-216-486-00	METAL OXIDE 8.2K 5% 3W F	
R715	1-249-417-11	CARBON 1K 5% 1/4W	
R716	1-247-815-91	CARBON 220 5% 1/4W	
R717	1-249-408-11	CARBON 180 5% 1/4W	
R718	1-202-814-11	SOLID 33K 10% 1/2W	
R720	1-249-423-11	CARBON 3.3K 5% 1/4W	
R722	1-202-848-00	SOLID 680K 10% 1/2W	
R723	1-249-417-11	CARBON 1K 5% 1/4W	
R724	1-202-846-00	SOLID 470K 10% 1/2W	
R726	1-260-103-11	CARBON 2.2K 5% 1/2W	
R727	1-247-815-91	CARBON 220 5% 1/4W	
R728	1-216-350-11	METAL OXIDE 1.2 5% 1W F	
R729	1-249-408-11	CARBON 180 5% 1/4W	
R731	1-249-423-11	CARBON 3.3K 5% 1/4W	
R733	1-249-415-11	CARBON 680 5% 1/4W	
R734	1-247-807-31	CARBON 100 5% 1/4W	
R735	1-249-415-11	CARBON 680 5% 1/4W	
R736	1-216-486-00	METAL OXIDE 8.2K 5% 3W F	
R739	1-249-417-11	CARBON 1K 5% 1/4W	
R740	1-249-415-11	CARBON 680 5% 1/4W	
R741	1-202-549-00	SOLID 100 20% 1/2W	
R744	1-249-421-11	CARBON 2.2K 5% 1/4W	
R745	1-249-421-11	CARBON 2.2K 5% 1/4W	
R746	1-249-421-11	CARBON 2.2K 5% 1/4W	
R747	1-249-437-11	CARBON 47K 5% 1/4W	
R748	1-249-417-11	CARBON 1K 5% 1/4W	
R749	1-249-435-11	CARBON 33K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M	
RV702	1-241-656-21	RES, ADJ, METAL FILM 110M	
		**********	
	*A-1640-214-A	D2 BOARD, COMPLETE **********	
		< CAPACITOR >	
C1801	1-126-967-11	ELECT 47MF 20% 50V	
C1803	1-137-368-11	FILM 0.0047MF 5% 50V	
C1804	1-126-964-11	ELECT 10MF 20% 50V	
C1807	1-137-366-11	FILM 0.0022MF 5% 50V	
		< CONNECTOR >	
CN1801	1-573-299-21	CONNECTOR, BOARD TO BOARD 10P	
CN1803	*1-568-878-51	PIN, CONNECTOR 3P	
		< DIODE >	
D1802	8-719-110-17	DIODE RD10ESB2	
		< IC >	
IC1801	8-759-701-59	IC NJM78M09FA	
IC1802	8-759-603-37	IC M5216P	
		< LINK IC >	
JW1802	⚠ 1-532-605-91	LINK, IC 0.4A (ICP-F10)	
		< RESISTOR >	
R1807	1-247-883-00	CARBON 150K 5% 1/4W	
R1809	1-249-429-11	CARBON 10K 5% 1/4W	
R1810	1-249-429-11	CARBON 10K 5% 1/4W	
R1811	1-249-429-11	CARBON 10K 5% 1/4W	
R1812	1-249-429-11	CARBON 10K 5% 1/4W	
		**********	
	*A-1640-235-A	D3 BOARD, COMPLETE **********	
		< CAPACITOR >	
C2802	1-126-965-11	ELECT 22MF 20% 50V	

D3 D

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REF.NO.	PART NO.	DESCRIPTION	REMARK
		< CONNECTOR >	
CN2801	1-568-878-51	PIN, CONNECTOR 3P	
CN2802	*1-580-798-11	CONNECTOR PIN (DY) 6P	
CN2803	*1-580-798-11	CONNECTOR PIN (DY) 6P	
		< DIODE >	
D2801	8-719-991-33	DIODE 1SS133T-77	
		< TRANSISTOR >	
Q2801	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R2801	1-249-421-11	CARBON 2.2K 5% 1/4W	
		< RELAY >	
RY2801	1-755-068-11	RELAY	
		< COIL >	
T2801	1-411-981-11	COIL, CHOKE 245UH	
**********			
	*A-1642-190-A	D BOARD, COMPLETE	
		**********	
	4-201-023-01	SPACER, INSULATING	
	4-202-373-01	SPRING, IC	
		< CAPACITOR >	
C502	1-102-824-00	CERAMIC 470PF 5% 50V	
C503	1-136-165-00	FILM 0.1MF 5% 50V	
C504	1-102-824-00	CERAMIC 470PF 5% 50V	
C506	1-126-941-11	ELECT 470MF 20% 25V	
C507	1-109-953-11	ELECT 2.2MF 20% 50V	
C509	1-136-165-00	FILM 0.1MF 5% 50V	
C510	1-126-969-11	ELECT 220MF 20% 50V	
C511	1-136-202-11	FILM 0.33MF 5% 63V	
C513	1-106-220-00	MYLAR 0.1MF 10% 100V	
C514	1-136-165-00	FILM 0.1MF 5% 50V	
C515	1-126-941-11	ELECT 470MF 20% 25V	
C517	1-126-941-11	ELECT 470MF 20% 25V	
C518	1-102-228-00	CERAMIC 470PF 10% 500V	
C519	1-102-228-00	CERAMIC 470PF 10% 500V	
C520	1-126-941-11	ELECT 470MF 20% 25V	
C521	1-107-698-11	ELECT 10MF 20% 25V	
C522	1-126-964-11	ELECT 10MF 20% 50V	
C523	1-136-165-00	FILM 0.1MF 5% 50V	
C600 ⚠	1-113-890-51	ELECT 0.0022MF 20% 250V	
C601 ⚠	1-161-964-91	CERAMIC 0.0047MF 250V	
C602 ⚠	1-161-964-91	CERAMIC 0.0047MF 250V	
C603	1-125-555-11	ELECT 330MF 20% 400V	
C604	1-126-968-11	ELECT 100MF 20% 50V	
C605	1-107-929-11	ELECT 10MF 20% 100V	
C606	1-162-318-11	CERAMIC 0.001MF 10% 500V	
C607	1-104-666-11	ELECT 220MF 20% 25V	
C608	1-109-880-11	FILM 0.0015MF 3% 2KV	
C611	1-102-228-00	CERAMIC 470PF 10% 500V	
C612	1-111-160-91	ELECT 22MF 20% 100V	
C613	1-124-347-00	ELECT 100MF 20% 160V	
C614	1-128-526-11	ELECT 100MF 20% 25V	
C615	1-111-067-11	ELECT 0.001MF 20% 25V	
C616	1-111-067-11	ELECT 0.001MF 20% 25V	
C617	1-128-339-51	ELECT 2200MF 20% 16V	
C618	1-136-165-00	FILM 0.1MF 5% 50V	
C619	1-102-228-00	CERAMIC 470PF 10% 500V	
C620	1-102-228-00	CERAMIC 470PF 10% 500V	
C621	1-136-165-00	FILM 0.1MF 5% 50V	
C622	1-107-925-11	ELECT 1.0MF 20% 100V	
C623	1-104-666-11	ELECT 220MF 20% 25V	
C624	1-136-165-00	FILM 0.1MF 5% 50V	
C625	1-126-967-11	ELECT 47MF 20% 50V	
C626	1-104-666-11	ELECT 220MF 20% 25V	
C628	1-126-964-11	ELECT 10MF 20% 50V	
C629	1-111-097-11	ELECT 2200MF 20% 35V	
C630	1-111-097-11	ELECT 2200MF 20% 35V	
C631	1-126-965-11	ELECT 22MF 20% 50V	
C632	1-104-666-11	ELECT 220MF 20% 25V	
C633 ⚠	1-107-563-12	FILM 0.1MF 20% 300V	
C634 ⚠	1-107-563-12	FILM 0.1MF 20% 300V	
C635 ⚠	1-107-563-12	FILM 0.1MF 20% 300V	
C636 ⚠	1-113-890-51	ELECT 0.0022MF 20% 250V	
C638	1-136-203-11	FILM 0.01MF 10% 630V	
C640	1-106-220-00	MYLAR 0.1MF 10% 100V	
C644	1-137-043-11	FILM 0.0047MF 10% 400V	
C647	1-162-116-00	CERAMIC 680PF 10% 2KV	
C651	1-102-228-00	CERAMIC 470PF 10% 500V	
C800	1-137-368-11	FILM 0.0047MF 5% 50V	
C801	1-137-368-11	FILM 0.0047MF 5% 50V	
C802	1-102-074-00	FILM 0.001MF 10% 50V	
C804	1-136-165-00	FILM 0.1MF 5% 50V	
C805	1-136-207-11	FILM 0.047MF 10% 250V	
C806	1-104-999-11	MYLAR 0.1MF 10% 200V	
C807	1-136-109-00	FILM 0.68MF 5% 200V	
C808	1-136-104-00	FILM 0.16MF 5% 200V	
C810	1-107-683-11	ELECT 2.2MF 0 250V	
C811	1-102-212-00	CERAMIC 820PF 10% 500V	
C812	1-136-540-11	FILM 0.82MF 5% 200V	
C813	1-129-722-00	FILM 0.047MF 10% 630V	
C814	1-136-084-00	FILM 0.0145MF 3% 2KV	
C815	1-137-047-11	FILM 0.01MF 10% 400V	
C816	1-162-134-11	CERAMIC 470PF 10% 2KV	
C817	1-162-116-00	CERAMIC 680PF 10% 2KV	
C818	1-162-134-11	CERAMIC 470PF 10% 2KV	
C819	1-136-208-11	FILM 0.068MF 10% 250V	
C820	1-102-114-00	CERAMIC 470PF 10% 50V	
C821	1-162-114-00	CERAMIC 0.0047MF 2KV	
C822	1-107-662-11	ELECT 22MF 20% 250V	
C824	1-123-024-21	ELECT 33MF 160V	
C829	1-124-902-00	ELECT 0.47MF 20% 50V	
C830	1-124-902-00	ELECT 0.47MF 20% 50V	
C832	1-124-903-11	ELECT 1MF 20% 50V	
C834	1-128-551-11	ELECT 22MF 20% 25V	
C835	1-162-318-11	CERAMIC 0.001MF 10% 500V	
C836	1-162-117-00	CERAMIC 100PF 10% 500V	
C837	1-102-978-00	CERAMIC 220PF 5% 50V	
C838	1-102-228-00	CERAMIC 470PF 10% 500V	
C839	1-136-207-11	FILM 0.047MF 10% 250V	
C845	1-101-880-00	CERAMIC 47PF 5% 50V	
C901	1-101-810-00	CERAMIC 100PF 5% 500V	

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REF.NO.	PART NO.	DESCRIPTION			REMARK
C902	1-137-372-11	FILM	0.022MF	5%	50V
C903	1-137-372-11	FILM	0.022MF	5%	50V
C904	1-104-665-11	ELECT	100MF	20%	25V
C905	1-126-964-11	ELECT	10MF	20%	50V
C906	1-126-964-11	ELECT	10MF	20%	50V
C907	1-126-964-11	ELECT	10MF	20%	50V
C908	1-126-964-11	ELECT	10MF	20%	50V
C911	1-126-964-11	ELECT	10MF	20%	50V
C913	1-101-810-00	CERAMIC	100PF	5%	500V
C914	1-101-004-00	CERAMIC	0.01MF		50V
C915	1-136-166-00	FILM	0.12MF	5%	50V
C1200	1-136-165-00	FILM	0.1MF	5%	50V
C1201	1-136-173-00	FILM	0.47MF	5%	50V
C1202	1-136-173-00	FILM	0.47MF	5%	50V
C1203	1-136-169-00	FILM	0.22MF	5%	50V
C1204	1-136-169-00	FILM	0.22MF	5%	50V
C1205	1-101-005-00	CERAMIC	0.022MF		50V
C1206	1-101-005-00	CERAMIC	0.022MF		50V
C1207	1-126-933-11	ELECT	100MF	20%	16V
C1208	1-126-963-11	ELECT	4.7MF	20%	50V
C1209	1-126-963-11	ELECT	4.7MF	20%	50V
C1212	1-162-318-11	CERAMIC	0.001MF	10%	500V
C1213	1-162-318-11	CERAMIC	0.001MF	10%	500V
C1214	1-126-933-11	ELECT	100MF	20%	16V
C1215	1-136-173-00	FILM	0.47MF	5%	50V
C1216	1-137-366-11	FILM	0.0022MF	5%	50V
C1217	1-137-366-11	FILM	0.0022MF	5%	50V
C1218	1-126-935-11	ELECT	470MF	20%	16V
		< CONNECTOR >			
CN600	⚠ 1-508-786-11	PIN, CONNECTOR (5MM PITCH) 2P			
CN601	⚠ 1-508-765-11	PIN, CONNECTOR (5MM PITCH) 3P			
CN603	⚠*1-580-844-11	PIN, CONNECTOR (POWER)			
CN800	*1-580-798-11	CONNECTOR PIN (DY) 6P			
CN801	*1-573-296-21	CONNECTOR, BOARD TO BOARD 10P			
CN803	1-695-915-21	TAB (CONTACT)			
CN804	1-778-037-11	PIN, CONNECTOR 6P			
CN807	1-568-878-51	PIN, CONNECTOR 3P			
CN900	1-568-678-11	TERMINAL BLOCK, S 3P			
CN902	1-695-299-11	CONNECTOR, BOARD TO BOARD 50P			
CN1401	*1-568-880-51	PIN, CONNECTOR 5P			
CN1407	1-564-511-11	PLUG, CONNECTOR 8P			
CN1408	*1-568-879-11	PIN, CONNECTOR 4P			
CN1420	1-568-878-51	PIN, CONNECTOR 3P			
		< DIODE >			
D500	8-719-109-85	DIODE RD5.1ES-B2			
D502	8-719-979-85	DIODE EGP20G			
D503	8-719-979-85	DIODE EGP20G			
D504	8-719-991-33	DIODE 1SS133T-77			
D505	8-719-982-03	DIODE MTZJ-3.6A			
D506	8-719-991-33	DIODE 1SS133T-77			
D507	8-719-109-85	DIODE RD5.1ES-B2			
D600	8-719-510-53	DIODE D4SB60L			
D601	8-719-046-77	DIODE EM1-V1			
D603	8-719-109-97	DIODE RD6.8ES-B2			
D604	8-719-046-75	DIODE EU-1-V1			
D605	8-719-302-43	DIODE EL1Z			
D606	8-719-302-43	DIODE EL1Z			
D607	8-719-046-78	DIODE EG-1Z-V1			
D608	8-719-302-06	DIODE EU2A			
D609	8-719-301-64	DIODE RU4DS			
D610	8-719-046-74	DIODE AU-01Z-V1			
D611	8-719-058-38	DIODE FMN-G12S			
D612	8-719-046-76	DIODE RU-3YX-V1			
D613	8-719-058-38	DIODE FMN-G12S			
D614	8-719-058-38	DIODE FMN-G12S			
D615	8-719-046-75	DIODE EU-1-V1			
D616	8-719-110-03	DIODE RD7.5ESB2			
D617	8-719-991-33	DIODE 1SS133T-77			
D618	8-719-991-33	DIODE 1SS133T-77			
D619	8-719-991-33	DIODE 1SS133T-77			
D620	8-719-991-33	DIODE 1SS133T-77			
D622	8-719-923-60	DIODE MTZJ-T-77-9.1A			
D625	8-719-991-33	DIODE 1SS133T-77			
D626	8-719-046-74	DIODE AU-01Z-V1			
D631	8-719-109-93	DIODE RD6.2ES-B2			
D800	8-719-991-33	DIODE 1SS133T-77			
D801	8-719-991-33	DIODE 1SS133T-77			
D802	8-719-991-33	DIODE 1SS133T-77			
D803	8-719-908-03	DIODE GP08D			
D807	8-719-302-43	DIODE EL1Z			
D808	8-719-908-03	DIODE GP08D			
D809	8-719-018-82	DIODE RGP02-20EL-6394			
D810	8-719-302-43	DIODE EL1Z			
D812	8-719-038-49	DIODE FMS-3FU-LF027-103			
D815	8-719-908-03	DIODE GP08D			
D817	8-719-109-85	DIODE RD5.1ES-B2			
D901	8-719-030-11	DIODE SLA-570KT3F			
	*4-203-258-01	HOLDER,LED ;D901			
D902	8-719-923-60	DIODE MTZJ-T-77-9.1A			
D903	8-719-923-60	DIODE MTZJ-T-77-9.1A			
D904	8-719-923-60	DIODE MTZJ-T-77-9.1A			
D905	8-719-923-60	DIODE MTZJ-T-77-9.1A			
D906	8-719-923-60	DIODE MTZJ-T-77-9.1A			
D1201	8-719-109-72	DIODE RD3.9ES-B2			
		< FUSE >			
F601	⚠ 1-576-232-21	FUSE (H.B.C.) 5A/250V			
	⚠ 1-533-230-12	HOLDER, FUSE ;F601			
		< FERRITE BEAD >			
FB600	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH			
FB601	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH			
FB602	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH			
FB604	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH			
FB605	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH			
FB606	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH			
FB607	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH			
FB608	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH			
FB800	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH			
		< IC >			
IC500	8-759-192-71	IC STV9379			
IC600	8-749-010-92	IC STR-S6709			
IC601	⚠ 8-749-924-92	IC TLP721(D4-)			
IC602	8-749-920-61	IC SE-135N			
IC603	8-759-144-82	IC µPC2405HF			
IC604	8-759-510-52	IC TEA7605			
IC606	8-759-267-25	IC LM2940T-9.0			
IC800	8-759-103-93	IC µPC393C			
IC900	8-747-905-11	RAY CATCHER ELEMENT SBX1790-51			

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REF.NO.		PART NO.	DESCRIPTION				REMARK
			< JACK SOCKET >				
J900		1-764-606-11	JACK				
J1200		1-770-218-11	JACK, PIN				
			< COIL >				
L502		1-412-519-11	INDUCTOR	3.3UH			
L503		1-412-519-11	INDUCTOR	3.3UH			
L609		1-412-533-21	INDUCTOR	47UH			
L611		1-412-527-11	INDUCTOR	15UH			
L612		1-412-522-41	INDUCTOR	5.6UH			
L613		1-412-522-41	INDUCTOR	5.6UH			
L615		1-412-529-11	INDUCTOR	22UH			
L616		1-412-533-21	INDUCTOR	47UH			
L801		1-459-111-00	COIL, DRAM CORE (CDI)				
L802		1-459-104-00	COIL, WITH CORE				
L803		1-420-872-00	COIL, AIR-CORE				
L804		1-429-306-11	TRANSFORMER, HORIZONTAL LINEARITY				
L805		1-406-674-11	COIL, CHOKE 3.3MMH				
L806		1-412-527-11	INDUCTOR	15UH			
L809		1-412-533-21	INDUCTOR	47UH			
L811		1-406-978-11	COIL, CHOKE 150UH				
L813		1-412-552-11	INDUCTOR	2.2MMH			
L901		1-408-603-31	INDUCTOR	10UH			
L902		1-408-603-31	INDUCTOR	10UH			
L903		1-408-409-00	INDUCTOR	10UH			
L904		1-408-409-00	INDUCTOR	10UH			
			< IC LINK >				
PS600	⚠	1-532-686-91	LINK, IC 2.7A (ICP-F75)				
PS601	⚠	1-532-686-91	LINK, IC 2.7A (ICP-F75)				
PS602	⚠	1-532-686-91	LINK, IC 2.7A (ICP-F75)				
PS603	⚠	1-532-686-91	LINK, IC 2.7A (ICP-F75)				
			< TRANSISTOR >				
Q501		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q502		8-729-119-76	TRANSISTOR 2SA1175-HFE				
Q503		8-729-900-89	TRANSISTOR DTC144ES				
Q601		8-729-025-04	TRANSISTOR 2SC3852A				
Q602		8-729-320-28	TRANSISTOR 2SA1667				
Q603		8-729-805-05	TRANSISTOR 2SC3601-E				
Q604		8-729-024-35	TRANSISTOR 2SC2808STP-R				
Q605		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q606		8-729-900-65	TRANSISTOR DTA144ES				
Q607		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q800		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q801		8-729-017-06	TRANSISTOR 2SC4793				
Q802		8-729-016-32	TRANSISTOR 2SC4927-01				
Q803		8-729-119-80	TRANSISTOR 2SC2688-LK				
Q804		8-729-900-89	TRANSISTOR DTC144ES				
Q805		8-729-900-89	TRANSISTOR DTC144ES				
Q900		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q1200		8-729-119-78	TRANSISTOR 2SC2785-HFE				
Q1201		8-729-900-74	TRANSISTOR DTC143TS				
Q1202		8-729-900-80	TRANSISTOR DTC114ES				
Q1203		8-729-900-74	TRANSISTOR DTC143TS				
Q1204		8-729-900-74	TRANSISTOR DTC143TS				

REF.NO.		PART NO.	DESCRIPTION				REMARK
			< RESISTOR >				
R500		1-215-457-00	METAL	33K	1%	1/4W	
R502		1-249-421-11	CARBON	2.2K	5%	1/4W	
R503		1-249-429-11	CARBON	10K	5%	1/4W	
R504		1-215-457-00	METAL	33K	1%	1/4W	
R505		1-249-382-11	CARBON	1.2	5%	1/4W	F
R507		1-215-888-00	METAL OXIDE	220	5%	2W	F
R508		1-216-371-00	METAL OXIDE	1.5	5%	2W	F
R509		1-249-443-11	CARBON	0.47	5%	1/4W	F
R510		1-249-443-11	CARBON	0.47	5%	1/4W	F
R520		1-215-457-00	METAL	33K	1%	1/4W	
R521		1-215-457-00	METAL	33K	1%	1/4W	
R522		1-247-863-91	CARBON	22K	5%	1/4W	
R523		1-247-863-91	CARBON	22K	5%	1/4W	
R524		1-249-425-11	CARBON	4.7K	5%	1/4W	
R525		1-249-425-11	CARBON	4.7K	5%	1/4W	
R526		1-249-421-11	CARBON	2.2K	5%	1/4W	
R600		1-216-490-11	METAL OXIDE	39K	5%	3W	F
R601		1-249-417-11	CARBON	1K	5%	1/4W	
R602		1-215-473-00	METAL	150K	1%	1/4W	
R603		1-215-898-11	METAL OXIDE	10K	5%	2W	F
R604		1-249-420-11	CARBON	1.8K	5%	1/4W	
R605		1-216-362-11	METAL OXIDE	0.27	5%	2W	F
R607		1-216-421-11	METAL OXIDE	12	5%	1W	F
R608		1-216-365-00	METAL OXIDE	0.47	5%	2W	F
R610		1-215-427-00	METAL	1.8K	1%	1/4W	
R611		1-216-354-11	METAL OXIDE	2.7	5%	1W	F
R612		1-249-428-11	CARBON	8.2K	5%	1/4W	
R613		1-249-417-11	CARBON	1K	5%	1/4W	
R614		1-215-877-11	METAL OXIDE	22K	5%	1W	F
R615		1-249-435-11	CARBON	33K	5%	1/4W	
R616		1-215-471-00	METAL	120K	1%	1/4W	
R617		1-215-901-00	METAL OXIDE	33K	5%	2W	F
R618		1-247-863-91	CARBON	22K	5%	1/4W	
R619		1-216-425-11	METAL OXIDE	56	5%	1W	F
R620		1-260-131-11	CARBON	470K	5%	1/2W	
R621		1-216-425-11	METAL OXIDE	56	5%	1W	F
R622		1-249-437-11	CARBON	47K	5%	1/4W	
R623		1-249-429-11	CARBON	10K	5%	1/4W	
R624		1-249-393-11	CARBON	10	5%	1/4W	F
R625		1-249-434-11	CARBON	27K	5%	1/4W	
R626		1-249-430-11	CARBON	12K	5%	1/4W	
R627		1-216-347-11	METAL OXIDE	0.68	5%	1W	F
R628		1-249-415-11	CARBON	680	5%	1/4W	F
R629	⚠	1-244-945-91	CARBON	1M	5%	1/2W	
R630	⚠	1-218-265-21	METAL	8.2M	5%	1W	
R631	⚠	1-205-949-11	WIREWOUND	1.8	5%	10W	
R632		1-247-807-31	CARBON	100	5%	1/4W	
R633		1-247-807-31	CARBON	100	5%	1/4W	
R634		1-249-397-11	CARBON	22	5%	1/4W	F
R635		1-249-437-11	CARBON	47K	5%	1/4W	
R636		1-249-417-11	CARBON	1K	5%	1/4W	
R637		1-247-815-91	CARBON	220	5%	1/4W	
R638		1-247-863-91	CARBON	22K	5%	1/4W	
R639		1-215-427-00	METAL	1.8K	1%	1/4W	
R642	⚠	1-205-949-11	WIREWOUND	1.8	5%	10W	
R645		1-249-422-11	CARBON	2.7K	5%	1/4W	
R646		1-249-377-11	CARBON	0.47	5%	1/4W	F
R647		1-202-933-61	FUSIBLE	0.1	10%	1/2W	F
R649		1-249-426-11	CARBON	5.6K	5%	1/4W	F

D VM

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION				REMARK
R800	1-249-421-11	CARBON	2.2K	5%	1/4W	
R802	1-249-429-11	CARBON	10K	5%	1/4W	
R803	1-249-423-11	CARBON	3.3K	5%	1/4W	
R805	1-247-863-91	CARBON	22K	5%	1/4W	
R809	1-247-890-00	CARBON	330K	5%	1/4W	
R812	1-249-421-11	CARBON	2.2K	5%	1/4W	
R813	1-215-867-00	METAL OXIDE	470	5%	1W	F
R814	1-249-411-11	CARBON	330	5%	1/4W	
R816	1-216-481-11	METAL OXIDE	1.2K	5%	3W	F
R817	1-216-481-11	METAL OXIDE	1.2K	5%	3W	F
R818	1-215-883-11	METAL OXIDE	33	5%	2W	F
R819	1-216-345-11	METAL OXIDE	0.47	5%	1W	F
R820	1-249-403-11	CARBON	68	5%	1/4W	
R821	1-215-909-11	METAL OXIDE	47	5%	3W	F
R822	1-215-868-00	METAL OXIDE	680	5%	1W	F
R824	1-249-420-11	CARBON	1.8K	5%	1/4W	
R826	1-247-752-11	CARBON	1K	5%	1/2W	
R827	1-249-425-11	CARBON	4.7K	5%	1/4W	
R828	1-247-863-91	CARBON	22K	5%	1/4W	
R829	1-249-493-11	CARBON	56K	5%	1/2W	
R830	1-217-778-11	FUSIBLE	1K	5%	1W	F
R832	1-215-877-11	METAL OXIDE	22K	5%	1W	F
R833	1-249-441-11	CARBON	100K	5%	1/4W	
R835	1-216-471-11	METAL OXIDE	27	5%	3W	F
R836	1-249-439-11	CARBON	68K	5%	1/4W	
R837	1-249-427-11	CARBON	6.8K	5%	1/4W	
R840	1-247-815-91	CARBON	220	5%	1/4W	
R841	1-249-418-11	CARBON	1.2K	5%	1/4W	
R842	1-249-441-11	CARBON	100K	5%	1/4W	
R843	1-247-891-00	CARBON	330K	5%	1/4W	
R846	1-247-893-11	CARBON	390K	5%	1/4W	
R847	1-247-897-11	CARBON	560K	5%	1/4W	
R848	1-249-863-91	CARBON	22K	5%	1/4W	
R849	1-249-429-11	CARBON	10K	5%	1/4W	
R850	1-249-425-11	CARBON	4.7K	5%	1/4W	
R851	1-215-898-11	METAL OXIDE	10K	5%	2W	F
R852	1-249-432-11	CARBON	18K	5%	1/4W	
R870	1-216-349-00	METAL OXIDE	1	5%	1W	F
R900	1-247-815-91	CARBON	220	5%	1/4W	
R901	1-247-734-11	CARBON	39	5%	1/2W	
R902	1-247-734-11	CARBON	39	5%	1/2W	
R904	1-249-389-11	CARBON	4.7	5%	1/4W	F
R905	1-247-804-11	CARBON	75	5%	1/4W	
R906	1-247-804-11	CARBON	75	5%	1/4W	
R907	1-247-804-11	CARBON	75	5%	1/4W	
R908	1-249-401-11	CARBON	47	5%	1/4W	
R909	1-249-429-11	CARBON	10K	5%	1/4W	
R910	1-249-422-11	CARBON	2.7K	5%	1/4W	
R911	1-249-426-11	CARBON	5.6K	5%	1/4W	
R912	1-249-429-11	CARBON	10K	5%	1/4W	
R913	1-247-863-91	CARBON	22K	5%	1/4W	
R914	1-249-437-11	CARBON	47K	5%	1/4W	
R919	1-249-437-11	CARBON	47K	5%	1/4W	
R921	1-249-437-11	CARBON	47K	5%	1/4W	
R922	1-247-807-31	CARBON	100	5%	1/4W	
R923	1-249-421-11	CARBON	2.2K	5%	1/4W	
R924	1-259-884-11	CARBON	4.7M	5%	1/4W	
R925	1-247-807-31	CARBON	100	5%	1/4W	
R926	1-259-884-11	CARBON	4.7K	5%	1/4W	
R1200	1-249-425-11	CARBON	4.7K	5%	1/4W	
R1201	1-249-434-11	CARBON	27K	5%	1/4W	
R1202	1-249-389-11	CARBON	4.7	5%	1/4W	F
R1203	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1204	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1205	1-249-428-11	CARBON	8.2K	5%	1/4W	
R1206	1-249-428-11	CARBON	8.2K	5%	1/4W	
R1207	1-249-413-11	CARBON	470	5%	1/4W	
R1208	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R1209	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R1210	1-249-413-11	CARBON	470	5%	1/4W	
R1211	1-249-424-11	CARBON	3.9K	5%	1/4W	
R1212	1-249-424-11	CARBON	3.9K	5%	1/4W	
R1213	1-249-421-11	CARBON	2.2K	5%	1/4W	
R1216	1-249-413-11	CARBON	470	5%	1/4W	
R1217	1-249-425-11	CARBON	4.7K	5%	1/4W	

< RELAY >

RY600	⚠	1-755-018-11	RELAY

< SWITCH >

S601	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)
S900		1-692-979-11	SWITCH, TACTILE
S901		1-692-979-11	SWITCH, TACTILE
S902		1-692-979-11	SWITCH, TACTILE

< SPARK GAP >

SG801		1-519-422-11	GAP, SPARK

< TRANSFORMER >

LF600	⚠	1-421-776-21	LFT
LF601	⚠	1-421-776-21	LFT
T601	⚠	1-429-604-11	SRT
T800		1-426-981-11	TRANSFORMER, FERRITE (PMT)
T803	⚠	1-453-169-11	TRANSFORMER ASSY, FLYBACK (UX-1604A2)
T804		1-437-090-31	HDT

< THERMISTOR >

THP600	⚠	1-809-827-11	THERMISTOR, POSITIVE

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*A-1644-070-A	VM BOARD, COMPLETE	
	**********	
*4-368-683-21	SPRING, TRANSISTOR	

< CAPACITOR >

C1701	1-126-933-11	ELECT	100MF	20%	16V
C1702	1-128-551-11	ELECT	22MF	20%	25V
C1703	1-126-933-11	ELECT	100MF	20%	16V
C1704	1-107-357-11	FILM	0.47MF	5%	100V
C1705	1-107-638-11	ELECT	33MF	20%	160V
C1706	1-104-999-11	FILM	0.1MF	5%	200V
C1707	1-137-397-11	FILM	0.047MF	5%	100V
C1708	1-137-364-11	FILM	0.001MF	5%	50V
C1709	1-137-364-11	FILM	0.001MF	5%	50V
C1710	1-102-074-00	CERAMIC	0.001MF	10%	50V
C1720	1-107-667-11	ELECT	2.2MF	20%	160V
C1721	1-137-397-11	FILM	0.047MF	5%	100V
C1722	1-126-934-11	ELECT	220MF	20%	16V

VM K1 J

REF.NO.	PART NO.	DESCRIPTION			REMARK
C1723	1-161-830-00	CERAMIC	0.0047MF		500V
C1725	1-128-551-11	ELECT	22MF	20%	25V
C1726	1-126-934-11	ELECT	220MF	20%	16V
		< CONNECTOR >			
CN1015	*1-568-880-51	PIN, CONNECTOR 5P			
CN1718	1-774-418-11	CONNECTOR, BOARD TO BOARD 8P			
		< DIODE >			
D1701	8-719-991-33	DIODE 1SS133T-77			
D1702	8-719-110-88	DIODE RD39ES-B2			
D1703	8-719-110-88	DIODE RD39ES-B2			
		< COIL >			
L1701	1-408-409-00	INDUCTOR	10UH		
L1702	1-408-403-00	INDUCTOR	3.3UH		
L1703	1-408-409-00	INDUCTOR	10UH		
L1704	1-408-418-00	INDUCTOR	56UH		
L1705	1-408-418-00	INDUCTOR	56UH		
		< TRANSISTOR >			
Q1701	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q1702	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q1703	8-729-017-05	TRANSISTOR 2SA1837			
Q1704	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q1706	8-729-017-06	TRANSISTOR 2SC4793			
Q1708	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q1709	8-729-119-78	TRANSISTOR 2SC2785-HFE			
		< RESISTOR >			
R1701	1-249-417-11	CARBON	1K	5% 1/4W	
R1702	1-249-417-11	CARBON	1K	5% 1/4W	
R1703	1-249-421-11	CARBON	2.2K	5% 1/4W	
R1704	1-249-415-11	CARBON	680	5% 1/4W	
R1705	1-247-815-91	CARBON	220	5% 1/4W	
R1706	1-247-815-91	CARBON	220	5% 1/4W	
R1708	1-249-412-11	CARBON	390	5% 1/4W	
R1712	1-260-311-11	CARBON	39	5% 1/2W	
R1713	1-249-384-11	CARBON	1.8	5% 1/4W	F
R1714	1-249-414-11	CARBON	560	5% 1/4W	F
R1715	1-249-432-11	CARBON	18K	5% 1/4W	
R1716	1-249-417-11	CARBON	1K	5% 1/4W	F
R1717	1-216-476-11	METAL OXIDE	180	5% 3W	F
R1718	1-249-432-11	CARBON	18K	5% 1/4W	
R1719	1-249-384-11	CARBON	1.8	5% 1/4W	F
R1720	1-249-400-11	CARBON	39	5% 1/4W	F
R1721	1-249-414-11	CARBON	560	5% 1/4W	
R1722	1-249-401-11	CARBON	47	5% 1/4W	
R1724	1-249-400-11	CARBON	39	5% 1/4W	
R1725	1-216-451-11	METAL OXIDE	120	5% 2W	F
R1728	1-249-413-11	CARBON	470	5% 1/4W	
R1729	1-249-413-11	CARBON	470	5% 1/4W	
R1730	1-249-422-11	CARBON	2.7K	5% 1/4W	
R1731	1-249-411-11	CARBON	330	5% 1/4W	

REF.NO.	PART NO.	DESCRIPTION			REMARK
	*A-1649-018-A	K1 BOARD, COMPLETE			
		**********			
	4-202-373-01	SPRING, IC			
		< CAPACITOR >			
C261	1-136-173-00	FILM	0.47MF	5%	50V
C262	1-136-165-00	FILM	0.1MF	5%	50V
C263	1-136-173-00	FILM	0.47MF	5%	50V
C264	1-136-173-00	FILM	0.47MF	5%	50V
C265	1-137-366-11	FILM	0.0022MF	5%	50V
C266	1-137-366-11	FILM	0.0022MF	5%	50V
C267	1-136-169-00	FILM	0.22MF	5%	50V
C268	1-136-169-00	FILM	0.22MF	5%	50V
C269	1-101-005-00	CERAMIC	0.022MF		50V
C270	1-101-005-00	CERAMIC	0.022MF		50V
C271	1-126-952-11	ELECT	1000MF	20%	35V
C272	1-126-952-11	ELECT	1000MF	20%	35V
		< CONNECTOR >			
CN1303	*1-568-879-11	PIN, CONNECTOR 4P			
CN1304	*1-568-879-11	PIN, CONNECTOR 4P			
CN1306	1-568-878-51	PIN, CONNECTOR 3P			
CN1307	*1-564-511-11	PLUG, CONNECTOR 8P			
		< DIODE >			
D260	8-719-109-72	DIODE RD3.9ES-B2			
		< IC >			
IC260	8-759-250-68	IC TDA7264			
		< TRANSISTOR >			
Q260	8-729-900-74	TRANSISTOR DTC143TS			
Q261	8-729-119-78	TRANSISTOR 2SC2785-HFE			
		< RESISTOR >			
R261	1-249-413-11	CARBON	470	5% 1/4W	
R262	1-249-421-11	CARBON	2.2K	5% 1/4W	
R263	1-249-434-11	CARBON	27K	5% 1/4W	
R264	1-249-425-11	CARBON	4.7K	5% 1/4W	
R265	1-249-424-11	CARBON	3.9K	5% 1/4W	
R266	1-249-424-11	CARBON	3.9K	5% 1/4W	
R267	1-212-849-00	FUSIBLE	4.7	5% 1/4W	F
R268	1-212-849-00	FUSIBLE	4.7	5% 1/4W	F
**********					
	*A-1651-088-A	J BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C290	1-101-003-00	CERAMIC	0.0047MF		50V
C291	1-101-005-00	CERAMIC	0.022MF		50V
C293	1-101-003-00	CERAMIC	0.0047MF		50V
C294	1-101-005-00	CERAMIC	0.022MF		50V
C296	1-101-003-00	CERAMIC	0.0047MF		50V
C297	1-101-005-00	CERAMIC	0.022MF		50V
		< CONNECTOR >			
CN1204	*1-564-519-11	PLUG, CONNECTOR 4P			

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

The components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

REF.NO.	PART NO.	DESCRIPTION	REMARK
CN1206	*1-564-518-11	PLUG, CONNECTOR 3P	
CN1208	*1-564-519-11	PLUG, CONNECTOR 4P	
CN1210	*1-564-519-11	PLUG, CONNECTOR 4P	
CN1211	*1-564-519-11	PLUG, CONNECTOR 4P	
CN1299	*1-564-519-11	PLUG, CONNECTOR 4P	
		< SOCKET >	
J291	1-537-339-11	TERMINAL BOARD	
J292	1-537-339-11	TERMINAL BOARD	
		< RESISTOR >	
R290	1-249-426-11	CARBON 5.6K 5% 1/4W	
R291	1-249-426-11	CARBON 5.6K 5% 1/4W	
R292	1-249-426-11	CARBON 5.6K 5% 1/4W	

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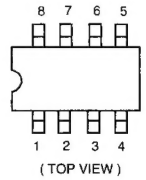
REF.NO.	PART NO.	DESCRIPTION	REMARK
		MISCELLANEOUS	
		*************	
	⚠ 1-411-893-11	COIL, DEGAUSSING	
	1-452-032-00	MAGNET, DISK; 10MM Ø	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
	1-452-724-22	COIL NA ROTATION (RT-165)	
	⚠ 1-453-169-11	TRANSFORMER ASSY, FLYBACK(UX-1604A2)	
	1-504-418-21	SPEAKER (5CM)	
	1-505-154-11	SPEAKER (6.5CM)	
	1-505-155-11	SPEAKER (10CM)	
	⚠ 1-540-006-22	CAP ASSY, HIGH-VOLTAGE	
	⚠ 1-571-433-21	SWITCH, PUSH (AC POWER)	
	1-693-338-11	TUNER/VIF (AEP) (KV-28WS2D/28WS2E/28WS2K/28WS2R)	
	1-693-340-11	TUNER/VIF (FR) (KV-28WS2B)	
	1-693-339-11	TUNER/VIF (UK) (KV-28WS2U)	
	⚠ 1-751-680-11	CORD, POWER (WITH NOISE FILTER) 2.5A/250V (KV-28WS2B/28WS2D/28WS2E)	
	⚠ 1-690-270-21	CORD, POWER (WITH CONNECTOR) 2.5A/250V (KV-28WS2K/28WS2R)	
	⚠ 1-776-204-11	CORD, POWER (FILTER) 3.0A/250V (KV-28WS2U)	
	⚠ 8-451-434-21	DEFLECTION YOKE (Y28GIA-B)	
	⚠ 8-453-005-61	NECK ASSY, PICTURE TUBE (NA297-M6)	
V901	⚠ 8-737-763-05	PICTURE TUBE (SD-284T)(W66LGY011X)	
		**********	
		ACCESSORIES AND PACKING MATERIALS	
		**********	
	1-765-654-11	CABLE SPEAKER	
	4-203-538-51	MANUAL, INSTRUCTION (KV-28WS2B) (FRENCH/GERMAN/ITALIAN/DUTCH)	
	4-203-538-11	MANUAL, INSTRUCTION (KV-28WS2D) (DUTCH/GREEK/ENGLISH/GERMAN)	
	4-203-538-71	MANUAL, INSTRUCTION (KV-28WS2E) (FINNISH/DANISH/NORWEGIAN/SWEDISH)	
	4-203-538-91	MANUAL, INSTRUCTION (KV-28WS2K/28WS2R) (CZECH/ENGLISH/POLISH/BULGARIAN/RUSSIAN)	
	4-203-538-61	MANUAL, INSTRUCTION (KV-28WS2U) (ENGLISH)	
	*4-050-191-01	CUSHION (UPPER) (ASSY)	
	*4-050-192-01	CUSHION (LOWER) (ASSY)	
	*4-050-193-01	INDIVIDUAL CARTON	
	*4-395-957-01	BAG, PROTECTION	
		REMOTE COMMANDER	
		**********	
	1-473-692-11	COMMANDER, STANDARD TYPE (RM-862)	

****

5-4. SEMICONDUCTORS

BA7046F



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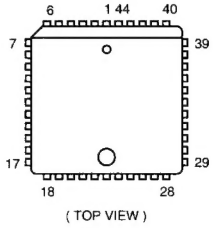
CF70203FN-F
CF70204FN-R
CF70211FN-R



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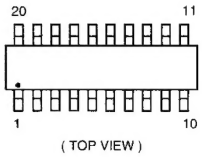

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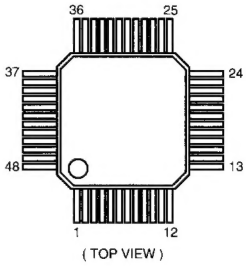

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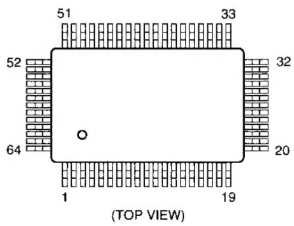

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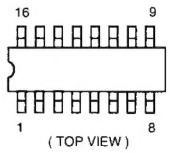

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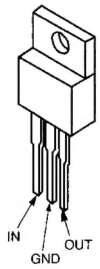

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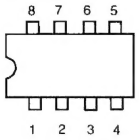

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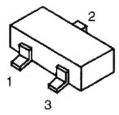

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2 : VDD
3 : VSS

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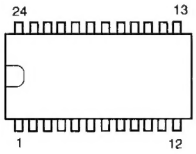

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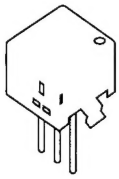

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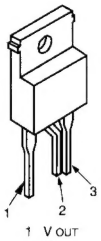

1 V OUT
2 V IN
3 GND

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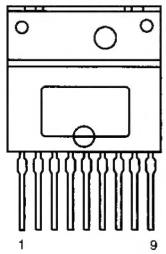

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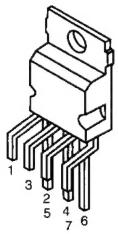

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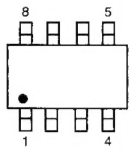

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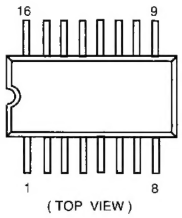

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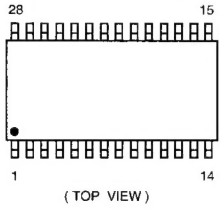

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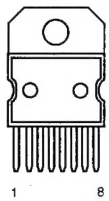

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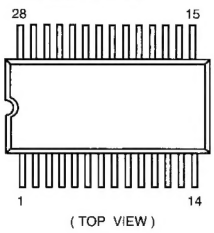

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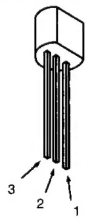

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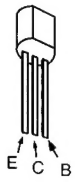

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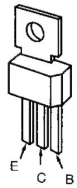

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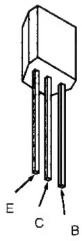

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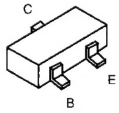

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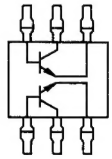

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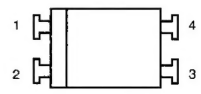

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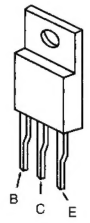

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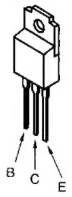

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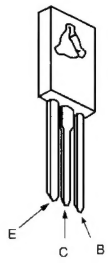

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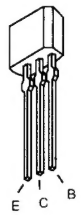

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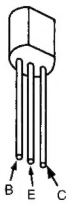

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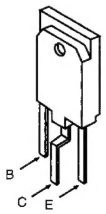

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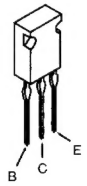

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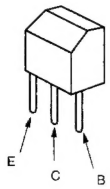

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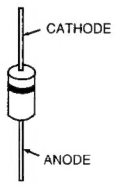
EL1Z	RGP10GPKG23
EM1-V1	RGP15GPKG23
EU-1-V1	RU3YX-LF-C4
EU-1Z	RU-3YX-V1
FML-G12S	RU4



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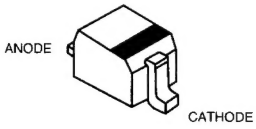

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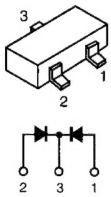

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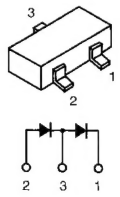

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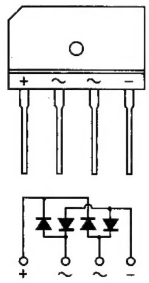

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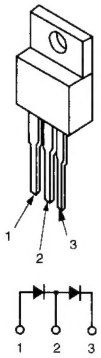

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MTZJ-3.6A	MTZJ-39C
MTZJ-3.9B	RD3.9ESB2
MTZJ-4.7B	RD5.1ESB2
MTZJ-5.1B	RD5.6ESB2
MTZJ-5.6B	RD6.8ESB2
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MTZJ-7.5C	RD9.1ESB3
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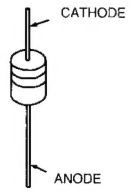

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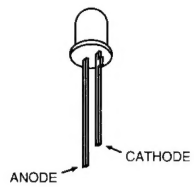
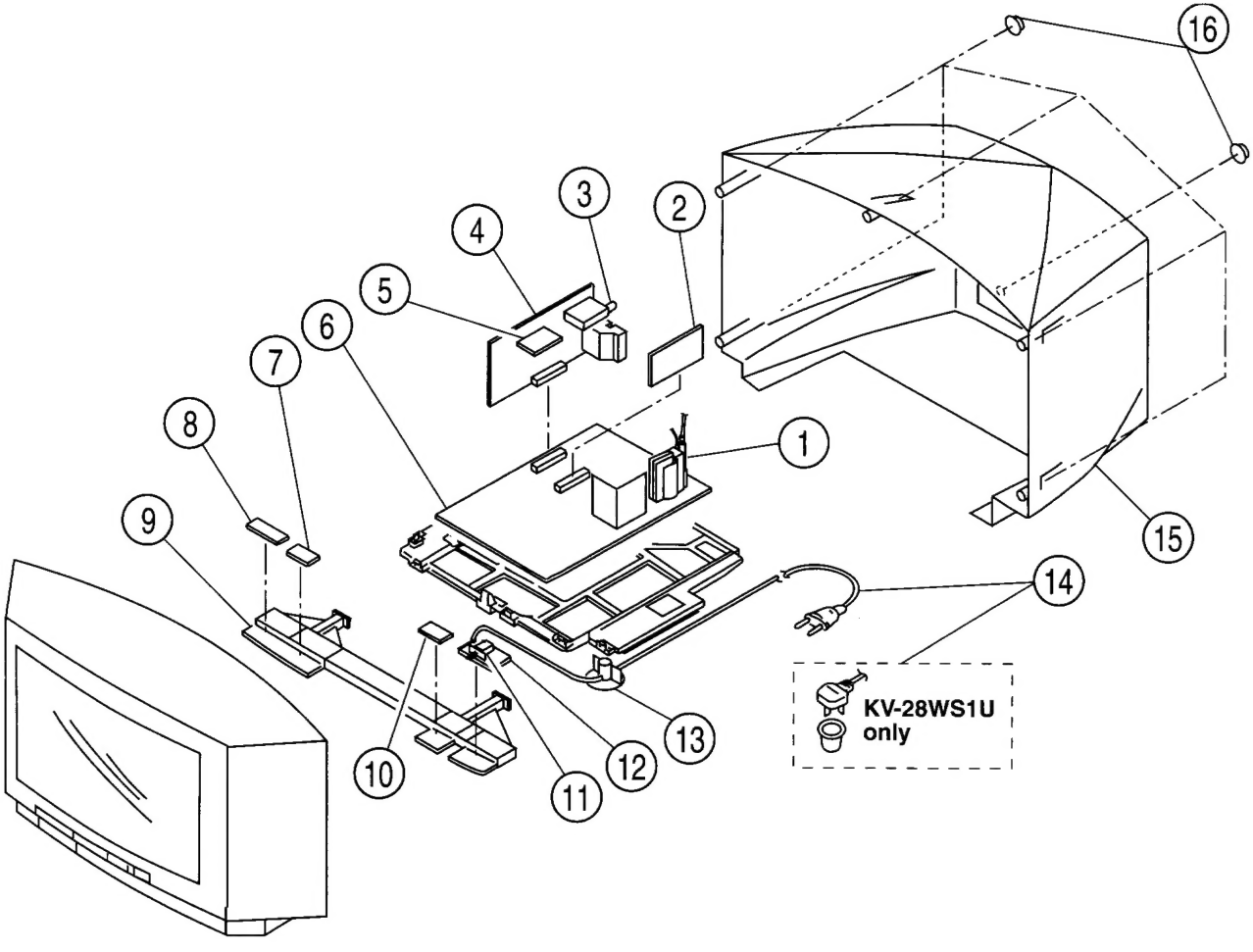
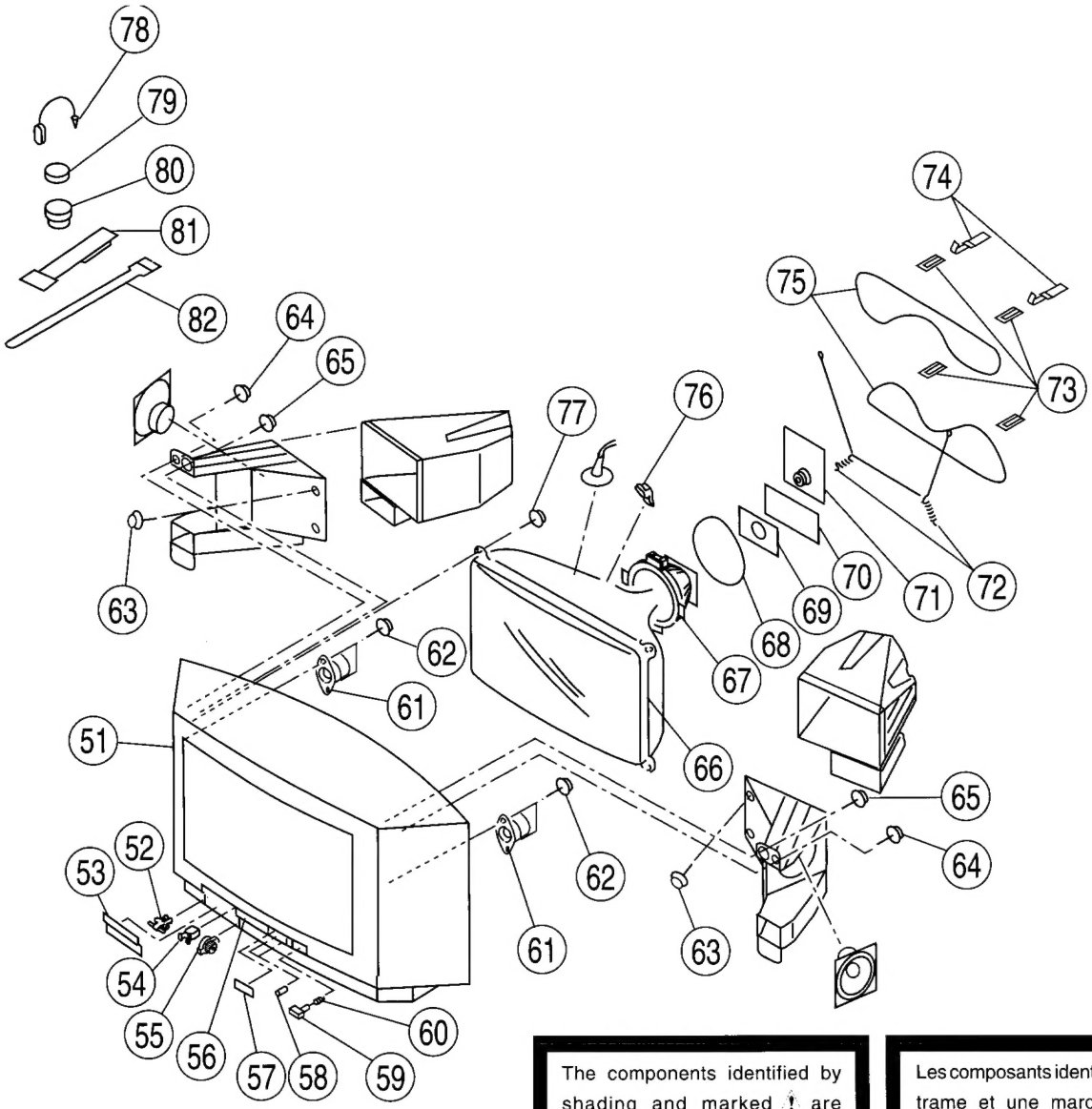


6-1. CHASSIS



6-2. PICTURE TUBE



The components identified by shading and marked ! are critical for safety.
Replace only with the part number specified.

Les composants identifies par une trame et une marque ! sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.